



Calhoun: The NPS Institutional Archive
DSpace Repository

Theses and Dissertations

1. Thesis and Dissertation Collection, all items

2011-12

The perfect storm : the religious apocalyptic imagination and personal disaster preparedness

Albertazzi, Anne Marie.

Monterey, California. Naval Postgraduate School

<http://hdl.handle.net/10945/10721>

Downloaded from NPS Archive: Calhoun



Calhoun is a project of the Dudley Knox Library at NPS, furthering the precepts and goals of open government and government transparency. All information contained herein has been approved for release by the NPS Public Affairs Officer.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE PERFECT STORM: THE RELIGIOUS
APOCALYPTIC IMAGINATION AND PERSONAL
DISASTER PREPAREDNESS**

by

Anne Marie Albertazzi

December 2011

Thesis Advisor:

Rodrigo Nieto-Gomez

Second Reader:

Anders Strindberg

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 2011	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE The Perfect Storm: The Religious Apocalyptic Imagination and Personal Disaster Preparedness			5. FUNDING NUMBERS	
6. AUTHOR(S) Anne Marie Albertazzi				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB Protocol number _____N/A_____.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Using the Citizen Corps' Personal Disaster Preparedness (PDP) Model as a framework, this thesis examines the relationship between religious apocalyptic beliefs and disaster preparedness motivations in the United States. Four focus groups were convened with members of the American public who reported holding religious beliefs that included an end-times doctrine. Findings include the following: 1) estimations of likelihood, impact and response efficacy were not significantly influenced by religious end-times beliefs; 2) beliefs in biblical prophesy did not alter the cognitive heuristics that have been shown to influence personal risk assessment; 3) spiritual beliefs motivated spiritual preparedness while material or secular concerns motivated actual completion of FEMA-recommended preparations; and 4) millennialist beliefs provided high spiritual self-efficacy, but it did not correlate with high material self-efficacy, which is essential to material preparation. Recommendations are made for leveraging high spiritual self-efficacy in millennialist faith groups to further DHS's mission of disaster resiliency. Suggestions include building a Threat/Efficacy profile specific to the religious populations that holds strong eschatological beliefs, with distinctions between pre-, post- and amillennialism, as well as Christian and non-Christian populations.				
14. SUBJECT TERMS Personal Disaster Preparedness, Citizen Corps, Personal Disaster Preparedness Model, Personal Behavior Change Model, Threat/Efficacy Profile, Fear Control, Danger Control, Problem-Focused Coping, Emotion-Focused Coping, Millennialism, Premillennial, Postmillennial, Amillennial.			15. NUMBER OF PAGES 105	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

**THE PERFECT STORM: THE RELIGIOUS APOCALYPTIC IMAGINATION
AND PERSONAL DISASTER PREPAREDNESS**

Anne Marie Albertazzi
Transportation Security Administration,
U.S. Department of Homeland Security
B.A., University of California, Los Angeles, 1989
M.A., Loyola Marymount University, 1995

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
December 2011**

Author: Anne Marie Albertazzi

Approved by: Rodrigo Nieto-Gomez, PhD
Thesis Advisor

Anders Strindberg, PhD
Second Reader

Daniel Moran, PhD
Chair, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Using the Citizen Corps' Personal Disaster Preparedness (PDP) Model as a framework, this thesis examines the relationship between religious apocalyptic beliefs and disaster preparedness motivations in the United States. Four focus groups were convened with members of the American public who reported holding religious beliefs that included an end-times doctrine. Findings include the following: 1) estimations of likelihood, impact and response efficacy were not significantly influenced by religious end-times beliefs; 2) beliefs in biblical prophecy did not alter the cognitive heuristics that have been shown to influence personal risk assessment; 3) spiritual beliefs motivated spiritual preparedness while material or secular concerns motivated actual completion of FEMA-recommended preparations; and 4) millennialist beliefs provided high spiritual self-efficacy, but it did not correlate with high material self-efficacy, which is essential to material preparation.

Recommendations are made for leveraging high spiritual self-efficacy in millennialist faith groups to further DHS's mission of disaster resiliency. Suggestions include building a Threat/Efficacy profile specific to the religious populations that holds strong eschatological beliefs, with distinctions between pre-, post- and amillenialism, as well as Christian and non-Christian populations.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	OVERVIEW: WHAT DOES RELIGIOUS MILLENIALISM HAVE TO DO WITH PERSONAL DISASTER PREPAREDNESS?.....	1
B.	INTRODUCTION: THE PROBLEM OF PERSONAL DISASTER RESILIENCE IN THE UNITED STATES	2
C.	THE UNEXPLORED RELATIONSHIP: STRONG RELIGIOSITY AND PERSONAL DISASTER PREPAREDNESS	5
D.	PURPOSE OF THIS THESIS	7
E.	HYPOTHESIS.....	8
F.	METHODOLOGY	8
G.	ORGANIZATION OF THIS THESIS:	8
II.	REVIEW OF THE LITERATURE	11
A.	DEFINITIONS	11
1.	Disaster.....	11
2.	Personal Preparedness.....	11
3.	Personal Disaster Risk Assessment	11
4.	Religion/Religiosity	12
5.	Christianity	12
B.	INTRODUCTION.....	13
1.	Literature.....	14
a.	<i>Baseline Data: Religiosity and Personal Preparedness in the United States.....</i>	<i>14</i>
b.	<i>Behavioral Science Research: How Humans Appraise Risk and Make Decisions.....</i>	<i>16</i>
c.	<i>Sociological Literature: Religious Doctrine as Interpretive Architecture.....</i>	<i>24</i>
d.	<i>Sociological and Behavioral Studies: How Religious Groups View Disaster in General.....</i>	<i>28</i>
e.	<i>Millennialist Theology: The Ultimate Catastrophe and How to Prepare.....</i>	<i>29</i>
2.	Premillennialism	32
3.	Postmillennialism	33
4.	Amillennialism.....	35
a.	<i>Implications of Millennialist Theology: Personal Control, Social Engagement and Scripting</i>	<i>35</i>
5.	Conclusion and Questions	38
III.	RESEARCH METHODOLOGY	41
A.	RESEARCH QUESTION	41
B.	HYPOTHESIS.....	41
C.	THE PURPOSE OF THE STUDY	42

D.	THE NATURE OF THE STUDY AND THE SUITABILITY OF A QUALITATIVE APPROACH	43
E.	THE DATA COLLECTION METHOD: FOCUS GROUPS	44
F.	OVERVIEW OF SAMPLING AND RECRUITMENT PROCESS	45
G.	FOCUS GROUPS: PARTICIPANTS, PROCESSES AND QUESTIONS	46
H.	DATA VALIDITY, RELIABILITY AND LIMITATIONS	49
1.	Generalizability	49
IV.	RESEARCH FINDINGS.....	51
A.	INTRODUCTION AND SUMMARY OF FINDINGS	51
1.	Threat/Efficacy Levels.....	55
a.	Threat Susceptibility	55
2.	Overview of Findings.....	55
3.	Inconsistencies	55
4.	Relation of Findings to the Literature	58
5.	Exceptions.....	58
a.	Threat Severity	59
6.	Overview of Findings.....	60
7.	Relation of Findings to the Literature	62
a.	Response Efficacy	62
8.	Overview of Findings.....	62
9.	Relation of Findings to the Literature	64
a.	Self-Efficacy	64
10.	Overview of Findings.....	64
11.	Relation of Findings to the Literature	66
12.	Relation of Findings to the Literature	67
B.	OVERALL PREPAREDNESS MOTIVATION AND THE ROLE OF RELIGIOSITY.....	67
1.	Overview of Findings.....	68
3.	Relation of Findings to the Literature	70
C.	CONCLUSION	71
V.	CONCLUSION AND RECOMMENDATIONS.....	73
A.	MILLENNIALISM, SELF-EFFICACY AND DISASTER RESILIENCE.....	73
1.	Significance of This Thesis	74
2.	Recommendations for Future Study	76
	LIST OF REFERENCES	79
	INITIAL DISTRIBUTION LIST	87

LIST OF FIGURES

Figure 1.	Threat/Efficacy Profile Based on Focus Group Findings	75
-----------	---	----

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	Composition of Focus Groups	46
Table 2.	Method for Capturing and Coding Focus Group Data.....	47
Table 3.	Findings Summary: Personal Preparedness and the Role of Religiosity	52
Table 4.	Findings Summary: Personal Risk Assessment and the Role of Religiosity ...	53
Table 5.	Threat Susceptibility Findings by Region	56
Table 6.	Threat Susceptibility Responses by Theme (Spokane, WA):	58
Table 7.	Threat Severity Findings by Theme:.....	60
Table 8.	Response Efficacy Findings by Theme:	63
Table 9.	Self-Efficacy Findings by Theme:	65
Table 10.	Exceptions	67
Table 11.	Preparedness Motivation and the Role of Religiosity: Findings by Theme	68

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

APHA	American Public Health Association
CCPR	Center for Catastrophic Preparedness and Response
CEG	Council for Excellence in Government
DHS	Department of Homeland Security
EPPM	Extended Parallel Process Model
HSAC	Homeland Security Advisory Council
GAO	Government Accountability Office
IAGS	Institute for the Analysis of Global Security
FEMA	Federal Emergency Management Agency
NCDP	National Center for Disaster Preparedness
NOAA	National Oceanic and Atmospheric Administration
PDP	Personal Disaster Preparedness
QHSR	Quadrennial Homeland Security Review
U.S.	United States

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

This thesis would not have been possible without the support of numerous people. I wish to extend my sincere gratitude to Gale Rossides, the TSA Executive Resource Council, Richard Whitford, Elizabeth Buchanan and Anthony Savastana for endorsing my candidacy for the Naval Postgraduate School's Center of Homeland Defense and Security master's program. During the 18-month course of studies leading to this thesis, I relied on the generous support of Sean Byrne, Deborah Grade, Paul Ross and Judy Finkelstein. Most recently, Randy Parsons, Cynthia Elliot and Darby Lajoie have supported my research during its final phases.

I owe distinct appreciation to Professor Rodrigo Nieto-Gomez who advised and ensured the successful completion of this project, as well as Professors Anders Strindberg and David Brannan, who guided me through my research and writing with brilliance and humor.

The focus group research would not have been possible without the assistance and initiative of Cynthia Atwood, Angela Finnie, Victor and Mary Albertazzi, and all the focus group participants who took the time to meet with me and discuss this topic.

For their invaluable friendship and understanding during this project, I wish to thank Kellis Turner and Cathy Finnie. Finally, I wish to thank my parents for instilling in me the value of education and service.

I dedicate this thesis to the memory of my sister, Connie, who led an extraordinary life of service before succumbing to cancer in January 2011.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

A. OVERVIEW: WHAT DOES RELIGIOUS MILLENIALISM HAVE TO DO WITH PERSONAL DISASTER PREPAREDNESS?

In the ongoing effort to foster disaster-resilient communities, emergency managers often grapple with the challenge of inspiring personal emergency preparedness, especially when no significant threat looms. In theory, the individual citizen would anticipate and build self-reliance in preparation for the next major disaster; in reality, the emergency manager is likely preparing for the inevitability that many citizens will not be ready (Cowlitz County Department of Emergency Management, 2011).

Emergency management veteran Eric Holdeman, named by one journalist the “high priest of all-hazard preparedness” (Paynter, 2001), has famously coined the four stages of disaster preparedness denial.

Stage 1 - “It won’t happen.”

Stage 2 - “If it does happen, it won’t happen to me.”

Stage 3 - “If it does happen to me, it won’t be that bad.”

Stage 4 - “If it happens to me and it’s bad, there’s nothing I can do to stop it anyway.”

(Holdeman, 2008, as cited in Greenstone, 2010).

According to the most recent national survey data, most of the American public may have adopted this logic of denial, given the low numbers of individuals who report being fully prepared for a natural or human-caused disaster (Citizen Corps, 2009, p.47). On a parallel track, other survey data indicates that most of the American public also consider themselves Christian and, to varying degrees, hold compelling theological views about the end of days (Pew Research Center, 2008).

For example, one millennialist says of final events:

No one knows when it will come, yet it will hit at an unexpected time, like September 11. This crisis could stem from many causes – economic, natural (such as a huge earthquake, etc.), or possibly, a terrorist attack (Wohlberg, 2008).

Is the [recent] tsunami a sign of the end? ... The sequence is: the sea and the waves roaring, then the Second Coming (Wohlberg, 2008).

And in this view, personal preparedness for catastrophe takes a spiritual form:

Jesus even said that when these things ‘begin to happen’ we should starting looking up, because our ‘redemption draws near (Luke 21:25-28).’ (Wohlberg, 2008).

...Are you one of God's ‘obedient children’? 1 Peter 1:14. If so, you need not fear the wrath to come (Wohlberg, 2008).

In fact, little is known about the role of end-times theology in personal disaster preparedness. This thesis investigates this connection in order to synthesize potential new knowledge in the intersection between disaster preparedness psychology and religious eschatology.

B. INTRODUCTION: THE PROBLEM OF PERSONAL DISASTER RESILIENCE IN THE UNITED STATES

One of the lessons learned after Hurricane Katrina—the most costly and fatal disaster on U.S. soil since 9/11—was that individual disaster preparedness, where feasible, could have gone a long way toward mitigating the losses sustained (Government Accountability Office (GAO), 2010, pp. 20–21; Institute for the Analysis of Global Security (IAGS), 2004; National Oceanic and Atmospheric Administration (NOAA), 2011). Should 9/11 and Hurricane Katrina seem distant memories, one need only recall more recent examples, including the foiled terror plot in Times Square in 2010; devastating accidents such as the Deepwater Horizon oil spill; and extensive Midwestern tornadoes in 2011 (Homeland Security Advisory Council (HSAC), 2011, p. 6). If the threat of disaster seems too nebulous, or regionally limited to inspire personal readiness, one study by the Hazards and Vulnerability Research Institute at the University of South

Carolina makes the threat perhaps more palpable. The study finds that 91% of American households are likely to experience a major natural disaster and/or act of terrorism (Ripley, 2006).

Given these odds, it is no surprise that the Department of Homeland Security (DHS) Secretary Napolitano (2009, 2011), the Quadrennial Homeland Security Review (QHSR) (2010, p.31), and the Homeland Security Advisory Council (HSAC) (2011, p. 7) all place personal preparedness at the core of national resilience and urge progress on this front. These various commentaries share themes of concern over limited emergency resources and recognition of the critical role civilians have played in the past.

First, in any major disaster, the demand for emergency assistance is almost certain to exceed the supply (GAO, 2010, p. 20). Professional response resources tend to be quickly depleted and significantly delayed, leaving the average household to absorb and manage the impact independently (HSAC 12, GAO, 2010, p. 20). Citizens who anticipate and prepare for this reality can join emergency managers in building national resiliency (Napolitano, 2011).

Second, members of the public contribute priceless intelligence to law enforcement authorities. By assuming the “alert, not alarmed” mindset, the engaged citizen enhances counterterrorism efforts by focusing authorities on actionable threats, such as the foiled Times Square car bomb in 2010 and the explosives plot in Spokane along the Martin Luther King Day parade route (Napolitano, 2011).

Third, citizens who take an all-hazards approach can partner more effectively with emergency managers to mitigate whatever risks might emerge. Accordingly, Presidential Policy Directive-PPD 8 (2011) emphasizes that resilience is broad in scope, embracing a panoply of hazards including terrorist attacks, pandemic disease outbreaks, cyber attacks, and all forms of significant natural disasters.

While federal officials and state and local emergency planners may recognize the enormous value of the disaster-ready household and the vigilant citizen, data suggests that major disasters and messaging since Katrina have not inspired in the public any significant increase in personal preparedness. According to surveys querying a cross-

section of the U.S. population, readiness for catastrophe remains inadequate, as measured by the low rate of respondents having effective emergency kits, plans and drills (Citizen Corps, 2006, p.1; 2007, p.3; 2009, p.47).¹

Material provisions aside, beliefs and attitudes toward preparedness lie at the core of ongoing national resilience. If ingrained and socially reinforced ideas run counter to effective self-reliance, behaviors are not likely to change. Leveraging “the nation’s best assets” (Flynn, 2011), means empowering and inspiring each citizen to take on a small but critical emergency management role, both in their communities and alongside professional planners and responders.

As Secretary Napolitano noted in 2009, having the plans and resources in place to survive and “emerge stronger than before” (p. 3) defines personal resilience in the face of today’s threats. Under current circumstances, preparedness efforts should rest on the fact that emergency assistance will be overmatched and significantly delayed (HSAC, 2011, p. 12; GAO, 2010, p. 20). As such, the personal preparedness mission, more than ever before, is a pragmatic and urgent one, with little allowance for wishing disaster away.²

In order to foster more self-reliance, DHS has employed messaging that emphasizes increasingly the psychological aspect of preparedness. Secretary Napolitano has adopted the phrase “*homeland security begins with hometown security*” (2011) as a way to increase awareness of the personal impact of disasters, and to dispel the illusion that disaster management is solely a government or first-responder function (Napolitano, 2009, p.3). Similarly, the Federal Emergency Management Agency (FEMA) programs, such as the Ready Campaign and Citizen Corps, both measure and promote personal responsibility for preparedness and survival, while aiming to reduce citizen dependence on local, state and federal authorities during emergencies (Napolitano, 2009, p.3 and C. Fugate, as cited in White House, 11 May 2010).

¹ Stephen Flynn attributes this inaction to inertia caused by the Cold War, when the threat of annihilation left homeland security in the hands of nuclear physicists (2011).

² The author acknowledges that political, socioeconomic and ecological influences cannot be ignored when examining preparedness gaps, and that the individual citizen is a partner in a multidisciplinary effort to achieve overall resiliency.

Yet, there is much progress to be made, both in increasing personal preparedness and in understanding the variables that might motivate it. As it stands today, over half of those surveyed indicated a misguided belief that they can—and will—depend on first responders during the initial seventy-two hours of a major event (Citizen Corps, 2009, p.20). And the idea of anticipating or planning for a terror attack has not gained any noteworthy traction among the public. Studies point to a prevailing belief that planning and preparation would be unlikely to make a difference in one’s survival, especially when it comes to terrorist attacks (Citizen Corps, 2007, p. 8; 2009, p. 28). While 82% believe in the value of planning for a natural disaster, only 59% believe in the usefulness of preparing for a terrorist attack (p. 28).

C. THE UNEXPLORED RELATIONSHIP: STRONG RELIGIOSITY AND PERSONAL DISASTER PREPAREDNESS

In the midst of what has been called “citizen apathy” (McEntire, 2008, p.12), there is a potentially noteworthy trend in the data that has not been explored. The most recent national preparedness survey shows a correlation between strong religious beliefs and high levels of personal disaster preparedness. Respondents who identify themselves as “very religious” are significantly more prepared for disaster than respondents who describe themselves as being “barely religious” or “not at all religious” (Citizen Corps, 2009, p. 44).

Survey and interview responses among the “very religious” reflect attitudes and behaviors that align with DHS’s vision of community resilience. That is, the self-reported religious group is significantly more likely to: 1) perceive that natural and man-made disasters occurring in their community would have a serious impact; 2) believe that there is value and usefulness in advance preparations; 3) have a household emergency plan and participate in preparedness exercises; 4) rely primarily on household members and faith-based or nonprofit groups in an emergency (Citizen Corps, 2009, p. 44).³

³ Religious respondents were 13% more likely to have an emergency plan in place and 8% more likely to have practiced shelter-in-place drills than their non-religious counterparts. Religious participants were also 7% more likely to believe in the utility of preparation, and their perception of the severity of disaster impact was 8% higher than the nonreligious respondents (Citizen Corps, 2009, p. 44).

This link between religiosity and personal preparedness has yet to be examined in depth, particularly from the standpoint of behavioral science. While it is well known that faith-based organizations have traditionally played a significant role in disaster *response* and *recovery*, the connection between individual religiosity and personal *preparedness*, in the absence of any salient threat, remains undefined. If this relationship were better understood, DHS would be able to define in more granularities what Secretary Napolitano has called “hometown security” (2011).

It must be noted that “religiousness” is a broad and often loaded term with many potential interpretations. In its survey and discussion of findings, the Citizen Corps neither defines the term nor asks respondents to identify a particular religious faith or denomination. Participants are simply asked to indicate “*how religious they believed they were*, according to the following categories: very religious, somewhat religious, barely religious, and not at all religious” (2009, p. 44, emphasis added).

Given such a broad topic, this thesis focuses on one particular element of religiosity: the belief in end-times prophesy. Thinking about disaster preparedness, for some individuals, may prompt a consideration of the worst case scenario: one’s own death and the end of human civilization. For the very religious, this eventuality is covered by theological teachings, particularly through interpretations of eschatological scriptures and other sacred narratives. Deeply held end-times beliefs often include theories of how the end of days will arrive, the role of disasters as indicators of the end, and the role and fate of believers in the final transcendence. For this reason, it would be important to understanding how religious eschatology might motivate or discourage preparation for disaster.

Little is understood about how eschatological beliefs figure into the personal disaster risk assessment process. How does personal risk look when viewed through a theological lens? How does the devout believer in prophesy view risk of disaster and the value of preparing a kit, plan and drills, as FEMA suggests? FEMA’s survey suggests that strong religiosity correlates positively with self-reliance and faith community reliance during emergencies (Citizen Corps, 2009, p. 44). Would end-times beliefs have

any influence on this correlation? Answering these questions would enhance future resilience-building efforts by creating knowledge about the specific attitudes that lie behind FEMA's numbers.

In author Stephen Flynn's vision (2011), the truly resilient citizen holds a special "civic virtue" marked by informed preparation, calm self-reliance, and a resourcefulness that ensures first responders are free to attend to those less fortunate. Do spiritual teachings informed by end-times prophecy foster this self-reliant civic virtue? Or, do they support a theological version of passivity described in Holdeman's "4 stages of denial" (as cited in Greenstone, 2010)? Few empirical studies have attempted to explore these questions.

Understanding the links, if any, between religious eschatology and personal disaster resilience, will provide a clearer picture of the sociological and psychological drivers for citizen preparedness. This, in turn, could inform emergency management strategy improvements, future survey methodologies, and targeted outreach efforts to all denominations of believers.

D. PURPOSE OF THIS THESIS

This thesis examines the relationship between religious millennialist beliefs and disaster preparedness motivations in the United States; it also offers recommendations for how the Department of Homeland Security might design future studies and outreach efforts in pursuit of individual disaster resiliency.

This study is motivated by the following research questions:

1. How do individuals with strong religious beliefs—particularly regarding end-times prophecy—assess their personal disaster risk and make decisions about whether to prepare?
 - a. Specifically, in terms of the Personal Disaster Preparedness Model (Citizen Corps, 2006, p. 3), how do end-times beliefs affect the individual's perceptions of:
 - the likelihood a natural or manmade disaster will affect them personally;

- the severity with which a disaster will impact them and/or their community;
 - their own capability to enact the necessary preparations; and
 - the usefulness of completing FEMA’s recommended personal preparations?
2. How might DHS leverage this knowledge to further its citizen preparedness mission?

E. HYPOTHESIS

The hypothesis is that millennialist beliefs influence personal disaster risk assessment by spiritualizing the risk appraisal process—including likelihood of impact, severity of impact, efficacy of responding, and ability to prepare. The millennialist approach is likely to elevate spiritual preparation (emotion-focused coping) over material preparation (problem-focused coping), unless faith-based social practices specifically foster material preparedness activities.

F. METHODOLOGY

The research design was centered on a qualitative approach. Empirical evidence was collected by convening several focus groups—also known as group interviews—composed of volunteers from the American public who reported being very religious. Participants were purposively sampled. The primary criteria for selection were the depth of the individual’s religious beliefs, and the likelihood those beliefs would include an end-times doctrine.

G. ORGANIZATION OF THIS THESIS:

Chapter II provides a review of the literature covering the empirical and theoretical findings related to danger perception, behavior motivation, and decision-making processes. It begins to answer the research questions from the perspectives of behavioral scientists, sociologists, and theologians. Chapter III develops the hypothesis, then details the methodology employed to address the research questions and to test the

hypothesis. This chapter also articulates the rationale for a qualitative approach, the purposive sampling method, the focus group process, and the manner in which data has been organized and analyzed.

Chapter IV reports and analyzes the study's findings, including consistencies and inconsistencies with evidence or theories found in the literature. Finally, Chapter V offers recommendations for applying the findings of this study to future studies and resilience-building efforts by the Department of Homeland Security.

THIS PAGE INTENTIONALLY LEFT BLANK

II. REVIEW OF THE LITERATURE

A. DEFINITIONS

1. Disaster

Following the parameters set by FEMA's survey methodology, disaster refers to "events that could disrupt water, power, transportation, and also emergency and public services for up to three days" (Citizen Corps, 2009, p. 60). This includes natural disasters, manmade disasters, and the gray area in between, where "man's and nature's influence on the outcome of events overlap considerably" (McCaughey, Hoffman & Llewellyn, 1994).

2. Personal Preparedness

(Also, referred to as 'material preparedness' to distinguish it from spiritual or emotional preparedness). This refers to FEMA's goal that "everyone in America become fully aware, trained, and practices on how to prevent, protect, mitigate, prepared for, and respond to all threats and hazards" (Citizen Corps, 2009, p. 3). Personal preparedness objectives include noticing and reporting possible terrorist activity, as well as a full range of household activities, including: compiling sufficient disaster supplies in the home for independent survival; a family emergency communication plan; the capability and supplies to evacuate or shelter-in-place; and household disaster plans (Citizen Corps, 2009, p. 3). In this sense, personal preparedness is largely material in nature and more than merely a state of mind.

3. Personal Disaster Risk Assessment

This term refers to the process by which an individual assesses and makes decisions regarding their risk of being exposed to disaster and the value of mitigating that risk. This process follows the Citizen Corps' Personal Disaster Preparedness Model (2006) and sets up the following constructs: *threat severity*, *threat susceptibility*, *self-efficacy*, and *response efficacy* (p. 3). These terms refer, respectively, to an individual's

perceptions of 1) how severe a threat is posed by various disaster types; 2) how severe this threat is to the individual personally; 3) how able the individual feels to enact the necessary preparations; and 4) how useful it would be to engage in FEMA's recommended personal preparations (Citizen Corps, 2006, p. 3).

4. Religion/Religiosity

There is nothing near consensus in the literature on this definition (Robinson, 2011). Moreover, some Christians reject the reference to religion altogether and prefer to view their system of beliefs as a deeply individual relationship with Jesus Christ (Robinson, 2011). The Citizen Corps 2009 survey leaves the definition to each individual respondent, who is asked to identify his or her beliefs along a spectrum ranging from 'Very religious,' 'Somewhat religious,' 'Barely religious,' and 'Not at all religious' (Citizen Corps, 2009, p. 76). Therefore, for the purpose of this research, a broader definition of religion will be used. Borrowing from B. A. Robinson (2011), religion is **"any specific system of belief about deity, often involving rituals, a code of ethics, a philosophy of life, and a worldview."** Put another way, **religion or religiosity is present when an individual holds a set of beliefs that explain or seek access to the supernatural, and are manifested in practices that reinforce or socialize those beliefs.**

5. Christianity

Similar to the definition of religion above, Christianity will be defined broadly to include "any person or group who sincerely believes themselves to be Christian" (Robinson, 2011). As an approximate profile of this population in the United States., the Pew Research Center (2008) finds that 78.4% of the people interviewed "report belonging to various forms of Christianity" (p. 5). Of those, Protestants account for 51.3%, Catholics make up 23.9%, and various other denominations compose the remaining 3.2% (p. 5).

B. INTRODUCTION

The starting point for this literature review is a positive correlation between religiosity and personal preparedness as found in the Citizen Corps preparedness survey data (2009). With the purpose of finding context for this correlation, this chapter explores topics including individual risk assessment, the role of religion in shaping individual thought patterns, the significance of religion in assessing the meaning of disaster, and the special case of Christian end-times theories as templates for personal risk assessment.

First, this chapter will address FEMA's Personal Disaster Preparedness (PDP) Model and the behavioral science literature underlying this model. Specifically, studies on cognitive appraisal and decision making have thoroughly catalogued the biases that distort effective risk assessment, which appear to be the root cause of unpreparedness. Little is known, however about the influence of religious beliefs in this process.

Next, this chapter reviews sociological literature concerning the role of religion in shaping interpretations of life events or circumstances. In this section, the literature offers insight into the unique power of religion to provide a sensemaking architecture, which is applicable to any number of otherwise unexplainable or unbearable events. It is not known what effect religious beliefs have on assessing personal risk, and whether religion has any effect on the cognitive distortions that occur in processing a threat.

This review will then turn to instances in which studies of religion and disaster are integrated. In these cases, the findings tend to focus on the disaster and its immediate aftermath, rather than the preparedness phase when no imminent threat is present; accordingly, they do not address the Citizen Corps finding of the Religiousness Profile. More importantly, these studies do not include personal preparedness in their examination of the role of religious groups in disaster.

Next, this review considers Christian millennialist theology and its variations, as covered in the theological and sociological literature. As a specific model of interpretive architecture, the narrative of the Christian millennium offers compelling—and competing—versions of the end of days. The literature highlights issues related to the

interpretation of natural disasters and other damaging events, as well as the role of the church in making end-times preparations. Very little is known, however, about the influence of these millennialist movements on attitudes about personal disaster preparedness.

Finally, in a survey of literature about the implications of millennialist beliefs, it can be seen that premillennialists operate from a catastrophic, unpredictable end-times model, while postmillennialists assume a greater degree of order and personal control with respect to final events. The distinction between the two theologies, however, has not been examined for implications to personal preparedness. Nevertheless, this theme in the literature provides a promising frame of reference for examining the influence of religious beliefs on disaster preparation decisions and behaviors.

1. Literature

The literature may be separated into six categories, as follows:

a. Baseline Data: Religiosity and Personal Preparedness in the United States

Studies by nonprofit organizations, such as Council for Excellence in Government (CEG), National Center for Disaster Preparedness (NCDP), Center for Catastrophic Preparedness and Response (CCPR), and American Public Health Association (APHA) have all established that current levels of household preparedness in the United States are insufficient in light of the government's capacity to aid the public during a disastrous event (Citizen Corps, 2007, p. 2, 4). More recently, a "nationally representative" survey published in the *Disaster Medicine and Public Health Preparedness* journal (Murphy et al., 2009, p. S1) echoes these findings. The authors conclude that "the public remains relatively ill-prepared" (p. S6), and they offer evidence that the possibility of a terrorist incident inspires far less motivation to prepare than does the threat of a natural disaster (p. S2).

At the time of this writing, the most comprehensive study of personal preparedness levels across the United States is the Citizen Corps National Survey, funded by FEMA's Community Preparedness Division and administered between April and May

of 2009 (Citizen Corps, 2009, p. 5). The study's methodology includes surveys and telephone interviews of a randomly selected population totaling 4,461 households in the United States (p. 6). The population sample was aligned with estimates from the U.S. Census of 2007; therefore, "the survey sample represents 96.5% of U.S. households" and provides responses from a cross-section of the American public (p. 6).

Among other factors, the Citizen Corps' 2009 study measures "the potential impact of religiousness on disaster preparedness" and provides the specific finding that there is a positive correlation between respondent's self-reported religiosity and their ability to perceive and prepare for disaster following FEMA's guidelines (p. 44). From this data, Citizen Corps offers a "Religiousness Profile," which shows that religious respondents' reported beliefs and behaviors align with FEMA's standard for preparedness more closely than their secular counterparts. It appears that this population is better positioned for disaster than people who reported being slightly religious or not religious at all (p. 44).

Since these findings about the general religious population, one study has produced findings specifically about members of the Latter-day Saints Church (Rohde, 2009). This study links Mormon religiosity to preparedness, as defined specifically by FEMA, and as such establishes a baseline for this particular denomination. The study finds that religiosity and spirituality are more likely to predict emergency preparedness for Latter-Day Saints than for other Christian denominations (pp. 95–99).⁴ Rohde attributes this finding to the notion that that Latter-day Saints are unique among Christians in their tradition of building self-sufficiency through material preparation (p. 99). Compared to other U.S. denominations, whose focus on preparedness is relatively recent, (p. 99); the Mormons' "pioneer" culture inheres an "early legacy of self-sacrifice, persecution, and independence" (p. 12), which then embeds self-efficacy into the organizational culture. Additionally, "Latter-day Saints believe that there is no separation between the sacred and the secular" (p. 9), and therefore emergency

⁴ This study, which surveys 160 Latter-day Saints and 140 individuals belonging to "other Christian denominations" (iii), studies the influence of various denominational beliefs on levels of self-efficacy, or "beliefs regarding a person's ability to prepare for emergencies," which then influences their actual preparedness (8).

preparedness, like other teachings of the church, is infused with a sacred meaning in ways that perhaps other religions have not experienced (p. 9). Since the study is aimed at aiding mental health professionals, implications of the findings are expressed in terms of the impact of Mormonism on the believers' ability to achieve "balance, satisfaction with life and preparedness" (iii).

Field research thus far has provided important clues as to the nature of religious influence on preparedness. Beyond these initial findings, however, little research has been conducted to examine how and why there is a correlation between religiosity and preparedness, and what the implications are for future Homeland Security policy.

b. Behavioral Science Research: How Humans Appraise Risk and Make Decisions

FEMA's survey instrument and methodology are based on the Citizen Corps' Personal Disaster Preparedness (PDP) Model, which explicitly applies the Extended Parallel Process Model (EPPM) behavioral theory (Citizen Corps, 2006, p.3 and 2009, p. 2). The EPPM traces the ways in which individuals "process a threat," including assessing its severity and deciding whether to engage in or avoid self-protective measures (Citizen Corps, 2006, p.3). Applying the EPPM specifically to disaster preparedness, Citizen Corps' PDP Model (2006) sets up the following constructs: *threat severity*, *threat susceptibility*, *self-efficacy*, and *response efficacy* (p. 3). These terms refer, respectively, to an individual's perceptions of 1) how severe a threat is posed by various disaster types; 2) how severe this threat is to the individual personally; 3) how able the individual feels to enact the necessary preparations; and 4) how useful it would be to engage in FEMA's recommended personal preparations (Citizen Corps, 2006, p. 3). These four belief constructs serve as a template for analyzing root causes of personal preparedness gaps; they also help to determine the likelihood a person will act constructively to mitigate their own risk (2006, p. 3).

FEMA's survey model appears to draw from a well-established body of behavioral science research on topics such as decision theory, coping theory, and appraisal theory. One of the issues in this literature concerns the processes by which

individuals appraise personal risk and decide whether to take or to avoid mitigation measures (Meyer, 2006, p. 158). A topic of great interest is the cognitive appraisal process. Studies in this area agree that “in order to survive and flourish people must distinguish between benign and dangerous situations,” and ascertaining this distinction requires “a highly versatile and efficient cognitive system” (Lazarus & Folkman, 1984/2010, Kindle Locations 595–597). Under this topic, relevant theories include *protection motivation theory*, which explores the links between precautionary behaviors (of which emergency preparedness is one) and perceptions of the seriousness of the threat, personal vulnerability, and the perceived benefit of preparing (van der Pligt, 1998, p. 4). In this sense, protection motivation theory resembles the EPPM. Other relevant works in this area examine—and disagree on—the role of cognitive, emotional and instinctual systems in “faulty danger adaptation,” or the failure of individuals to react constructively in support of their own life, health and safety when presented with credible risk (Wallenius, 2001, p. 172).

One of the most frequently discussed topics in decision theory, and one readily adopted by disaster sociologists, is the phenomenon of cognitive decision errors in the personal risk appraisal process. The seminal work of Tversky and Kahneman (1974) is almost universally cited and describes the mental shortcuts (heuristics) that people use when predicting or assessing the “the likelihood of uncertain events” (1974, p. 1124). These shortcuts create unintentional and often unconscious cognitive biases, which sometimes result in relatively valid conclusions and other times cause “severe and systematic errors” (Lazarus & Folkman, 1984/2010, Kindle Locations 1600–1602). Nevertheless, these shortcuts exist because humans have a finite capacity for processing information and for managing “distressing emotions” that occur conditions of ambiguity (Wallenius, 2001, p. 172).

The consensus in the behavioral science literature is that personal risk assessment, broadly speaking, is neither purely rational nor objectively accurate (Lazarus and Folkman, 1984/2010, Kindle Location 1772). Unlike statistical probability calculations used by technical experts, the human cognitive assessment function relies on templates of convenience, which produce inaccurate estimates but are relatively

predictable in all humans (Wallenius, 2001, p. 153; van der Pligt, 1998, p. 4, Tversky and Kahneman, 1974). And unlike expert risk calculations, the human emotional function defers anxiety about ambiguous consequences by amplifying or denying personal risk (Greenstone, 2010; Camerer & Kunreuther, 1989; Holdeman, 2008) and estimating risk based on socially learned fears rather than realistic calculations (Cigler, 2007, p. 66). In both the cognitive and the emotional systems, avoiding system overload appears to take priority over accuracy of assessment (Wallenius, 2001, p. 173). In this sense, what creates temporary relief also creates vulnerability.

Given these findings, personal assessments of *threat severity*, *threat susceptibility*, *self-efficacy*, and *response efficacy* are likely to reveal far more about cognitive heuristics and emotional defenses than about the individual's objective vulnerability in the face of disaster. Additionally, the sociological contexts for these assessments cannot be discounted. Arguably, each of the population "profiles" in Citizen Corps' report, which are built from aggregated survey data, hold a microcosm of individual, group and social influences that this population has likely expressed and internalized over time. Some of these factors are explicitly measured in the Citizen Corps study, such as gender, age, race/ethnicity, education, income, geographical location, and religiosity (2009, p. 34). And, to be sure, the sociological literature has focused much attention on the impact of these factors as well as others, especially since Hurricane Katrina. Some of these studies, for example, have viewed disaster preparation retrospectively, pointing to the incident as demonstration of pre-existing policy defects, socioeconomic imbalances, media biases, ecological issues, or mistaken vulnerability models (Tierney, 2001; Gaillard & Texier, 2010, p. 82). With that said, while understanding the sociological and cultural contexts for personal preparedness are important, the scope of the research in this section is limited to the personal risk assessment and decision processes as they are experienced by individuals.

The following section will outline the current knowledge on cognitive and emotional processes that influence an individual's appraisal of *threat severity*, *threat susceptibility*, *self-efficacy* and *response efficacy*. It is understood and assumed that these inner dynamics are difficult to separate from the social variables that shape them, and in

fact reflect the dialectical relationship, as explained by Berger (1969) between a person's consciousness and the environment seen as external to it (p. 91). However, this section will cover external variables only to the extent that they are perceived by the individual.

First, an assessment of *threat severity* involves forecasting the magnitude of impact resulting from a potential disaster. The literature shows that this assessment process is distorted by cognitive biases that either inflate or to underemphasize the danger (Slovic, 1986, pp. 404–405; Fischhoff, Slovic & Lichtenstein, 1982, p. 247). The availability bias, for instance, dictates that consequences most readily imagined or called to mind are the ones most likely to happen (Tversky & Kahneman, 1974, p. 1127); therefore, disaster impact scenarios dramatized in the press or experienced very recently in one's own life tend to be overestimated, while those difficult to imagine or not familiar in one's experience tend to be underestimated (Fischhoff, Slovic & Lichtenstein, 1982, p. 247; Slovic, 1986, p. 405). Incongruities in the literature, however, show that availability is complex, and involves emotional processes: exposure to recent disaster may heighten perception of threat severity, while repeated experience of disaster may reverse this perception and create false optimism (Glenn, 1979, p. 24; Gregory, 1995, p. 67); while efforts to reduce distress over uncertainty can lead to ignoring the uncertainty altogether and creating an all-or-nothing risk template (Slovic, 1986, p. 405). Arguably, threat severity assessments produce more knowledge about heuristics than threat itself.

Second, assessment of *threat susceptibility* requires estimating the likelihood that a disaster will affect oneself personally. The literature provides numerous examples of how estimation of personal vulnerability suffers from both mental miscalculations and emotional distortions. For instance, as part of the availability bias, people underestimate their own vulnerability in relation to others because the most readily imaginable scenarios of disaster are those in the media, which show adverse circumstances happening to other people. This leads to a false personal immunity (Fischhoff, Slovic & Lichtenstein, 1982, p. 247). Underestimation of personal invulnerability also results when individuals draw a cognitive equation between “it hasn't happened to me” and “it won't happen to me,” thereby avoiding actual probabilistic data in favor of easily retrievable experience (Camerer & Kunreuther, 1989, p. 569; Meyer,

2006, p. 162). Individuals also engage in the “gambler’s fallacy,” which states that if one has already been subjected to a disastrous event, the likelihood of it happening again in the same spot is very low (Gregory, 1995, p. 67). Emotional processes include denial, or minimizing one’s own vulnerability to minimize anxiety and fear about the prospect of a harmful event (van der Pligt, p. 4). In these ways, individuals tend to underestimate personal susceptibility in relation to others.

Third, considerations of *self-efficacy* involve an assessment of one’s own ability to enact self-protecting measures when presented with a threat. One of the conclusions in the literature is that perception of one’s ability to mitigate risk or danger is closely linked with perception of how much control one actually has over the circumstances or in life in general (Lazarus, 1984/2010, Kindle Locations 1605–1608). While the literature deals often with generalized stressful situations, to include interpersonal matters, there are some general conclusions that apply. For instance, it is argued that when a person cognitively assesses an actual or potential stressful situation, their estimation of threat decreases as their judgment of personal control increases (Lazarus, 1984/2010, 1484–1486). There is an emotional response as well; one may create for oneself the “illusion of control” as a way of relieving the anxiety that results from perceiving lack of influence on outcome predictability (Lazarus, 1984/2010, Kindle Locations 1577–1579; Lefcourt, 1973). One study applies the theory to earthquakes, noting that denial in the face of natural disasters may be caused by perceptions that such disasters are by nature uncontrollable (Lehman & Taylor, 1987, pp. 552–553). And yet, arguably, this control factor might work in the opposite direction; one’s projection of control *during* disaster impact might lessen their view of the threat when considered as a future or hypothetical event. However, the literature has not examined the perception of control as an influence on behaviors *before* impact and warning, when proactive precautionary behaviors are required and threat is not necessarily salient.

Fourth, ascertaining *response efficacy* entails judging the usefulness of following FEMA’s recommended preparedness instructions to mitigate personal risk. While technical experts can show that FEMA’s precautionary measures can significantly mitigate risk in communities, and while the literature has shown that reliance on the

government and first responders is unrealistic given the current resources and capabilities (GAO, 2010, pp. 20–21), individuals assess response efficacy more subjectively. The psychological literature is relatively silent on this topic; however, sociological studies on disaster insurance purchasing trends offer theories that may apply. For example, the “status quo bias” leads an individual to favor doing nothing over taking an action, particularly with low-probability, high-consequence events (Camerer & Kunreuther, 1989, 577–578). The basis of this bias has been called “ambiguity aversion,” in which an individual will do nothing rather than take an action requiring a decision in the face of uncertainty or unpredictable odds (Camerer & Kunreuther, 1989, p. 577–8). Additionally, when the risk stretches out over time, individuals tend to focus much more readily on the present gains or losses than the long-term benefits or damages; this leads to the conclusion that purchasing disaster supplies today is too great a cost when compared to possible benefits in a disaster that may happen months or years down the line (Camerer & Kunreuther, 1989, 577–8). Finally, response efficacy estimations can be blurred by what Kunreuther (2006) has called the “Samaritan’s dilemma” (p. 220). In this instance, when an individual observes that the government provides disaster compensation after the impact, the conclusion may be drawn that proactive measures are unnecessary (Kunreuther, 2006, p. 220). In these various instances of bias, the availability heuristic appears to be at work on the cognitive level, inducing the individual to favor what is immediately retrievable or understandable; while at the emotional level, denial and short-term vision relieve anxiety about the unpredictability of disaster and uncertainty of the value of preparations.

Whether or not an individual’s personal risk assessment is objectively accurate, it is merely an assessment and does not automatically translate to adoption of preparedness measures (van der Pligt, 1998, p. 5). While the literature agrees generally that understanding one’s vulnerability may influence thoughts about the necessity of preparing, there are mixed findings and disagreements as to the exact influence of perceived risk on actual behavioral modification (van der Pligt, 1998, p. 11), such as following the FEMA preparedness instructions. In light of this uncertainty about causation, the Citizen Corps PDP Model includes two important constructs that provide a

bridge between assessment and action. Here, Citizen Corps draws again from EPPM theory to outline the two possible ways that people will act if they believe they are indeed under a perceived threat: 1. danger control and 2. fear control (2006, p. 3). In the former instance, an individual will try to reduce the actual threat by engaging in practical self-protective behaviors (of which emergency preparedness is one); in the latter instance, an individual will aim their solution at the fear itself, engaging in “denial, rationalism, and escapism” (2006, p. 3). Since FEMA’s goal appears to be the more productive, solution-oriented danger control response, and since such a response requires a person to perceive appropriate levels of threat severity, threat susceptibility, self-efficacy and response efficacy, the Citizen Corps survey questions map directly to these thought processes. The resulting data inform Citizen Corps’ “threat/efficacy profiles,” which define attitudinal contours for specific portions of the population (2006, p. 3).

Citizen Corps’ *danger control/fear control* spectrum is rooted in cognitive theory (Wallenius, 2001, p. 152), specifically, the examination of mechanisms for coping with stress (Folkman & Lazarus, 1980). Studies in coping have covered an expanse of situational contexts, from “the distress of nurses in an intensive care unit” to “organizational stress” between co-workers, to “the stressful events of daily living” (Lazarus & Folkman, 1984/2010, Kindle Location 3057–3092). Across highly specific and broadly generalized contexts, the literature provides the overarching theory that danger control, or “problem-focused coping,” is used when one finds that one is able to exert control on the situation; while fear control, or “emotion-focused coping” is used when one feels that one has little or no control in the situation (Folkman & Lazarus, 1985). As such, “problem-focused coping” addresses the root of the anxiety while “emotion-focused coping” manages the anxiety itself (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984/2010, Kindle Locations 2963-2969).

Specific to disaster studies, Lehman and Taylor (1987) have argued that the unpredictability of natural disasters causes individuals to manage their emotions rather than the problem (pp. 552–553). More recently, studies show that this denial-

based coping is just as pronounced, if not more so, in relation to the risk of manmade disasters, such as terrorist attacks because they are considered more random (Aakko, 2004; Murphy et al., 2009, p. S8).

On the topic of religiosity, Cole and Pargament (1999) have mapped the practice of ‘spiritual surrender’ against problem-focused and emotion-focused coping practices. They note that spiritual surrender is common to most religions—including Judeo-Christian faiths, Islam and Buddhism—and involves gaining a paradoxical sense of control by relinquishing one’s personal will to their divine source (p. 184, 186). There is evidence that this practice of surrender provides emotional relief but also “clarity of mind” in support of proactive efforts to manage one’s problem (Cole & Pargament, 1999, p. 187). This would indicate that it enhances both problem-focused and emotion-focused coping. However, the authors apply their theory in the clinical setting in which a psychologist can support a client with life problems or addictions (pp. 192–194). It is not clear whether spiritual surrender produces the motivation to mitigate personal disaster risk through problem-focused coping.

Appraisals of threat, vulnerability and efficacy with regard to personal preparedness are highly complex, featuring multiple internal and external influences. The same holds true for the dynamics of emotion-focused and problem-focused coping. However, it is possible to trace some of the ways in which cognitive and emotional operations might work against optimal preparedness perceptions and behaviors. As such, the behavioral science literature offers theories and evidence that shed light on challenges in the risk assessment process, such as heuristic biases and emotional defenses.

Taken together, Citizen Corps’ PDP Model and the behavioral science literature define the personal belief patterns that either block or enable disaster preparedness. These collective findings help to frame additional field research, especially regarding the population segments that stand out as most or least prepared. One of the key gaps in the behavioral science literature, however, is a sustained application of risk appraisal and decision theories to disaster preparation behaviors. While some of the literature provides application in the areas of financial disaster preparedness, as in insurance purchasing (see Camerer & Kunreuther, 1989), the majority

of the studies are applied to health behaviors and personal safety issues, such as seat belt compliance, breast cancer screening and smoking cessation (Conroy, 2008; Campasano, 2010). Additionally, there has been no significant focus on the influence of religious beliefs in the risk appraisal and coping processes, especially with respect to constructs, such as *threat severity*, *threat susceptibility*, *self-efficacy*, *response efficacy*, *danger control* and *fear control*, as defined above. As such, little is known about the influence of religiosity on the risk appraisal and mitigation decision processes.

c. Sociological Literature: Religious Doctrine as Interpretive Architecture

Citizen Corps (2009) has created a specific threat/efficacy profile for each segment of its survey population, including the “strongly religious.” The more likely a population is to score high on the threat/efficacy profiles, the more likely they are to provide for their own safety in advance, and to heed FEMA’s preparedness instructions. As a model, the Citizen Corps’ PDP framework lays the foundation for examining more closely whether, in fact, religious beliefs are aligned with constructive or with fatalistic threat/efficacy profile when it comes to disaster readiness (2006, p. 3). However, as yet, no studies have attempted to map religious habits of thought against the Threat/Efficacy profiles.

In order to map the influence of religious beliefs on individual perceptions of *threat severity*, *threat susceptibility*, *self-efficacy*, and *response efficacy*, it will be important first to understand the general contours of religious thought patterns and the ways in which these patterns might shape perceptions of disastrous events, including their likelihood, significance and implications for individual preparedness behaviors. This understanding would inform assessments of the relationship between religious commitments and a *danger control* versus *fear control* response to the risk of a potential disaster.

Literature on the sociology of religion is well-established, and in its broadest sense, considers religion’s role in shaping the way individuals, groups and societies interpret their environment and set up behavioral norms. Within this discipline, field studies, as in Wilcox (1994) and Putnam (2000), have covered issues, such as

trends in church attendance, influences on choice of denomination, the interplay of religion and politics, and the role of religion in community-building. However, other than A. Rhode's study of preparedness motivations in the Latter Day Saints (2009), whose findings are restricted to Mormon groups in Utah, very little field data has been collected that links religiosity to attitudes about personal emergency preparedness.

Despite the scarcity of primary source data, theoretical literature on the sociology of religion provides general models that can be applied to the specific issue of personal preparedness motives in religious populations.⁵ Sociological theorists have, for example, outlined the ways in which religion constructs epistemological frameworks for interpreting complex phenomena and for undergirding social structures and individual beliefs. To the extent that religion resolves anxiety about the unexplainable or the grotesque, it exerts tremendous influence on the perceptions and motivations of believers (Berger, 1969). While the studies in this section approach the phenomenon of religion from different vantage points, they agree on religion's dominance as a socially binding force, as well as its ability to accommodate the human need for depth of purpose and meaning (Berger, 1969). In this way, the literature sets useful parameters for examining links between elements of religiosity and motivators for material emergency preparedness.

One frequently cited theory, advanced by Berger (1969), provides a working model for analyzing the role of religiosity in resolving ambiguity and providing consistency of meaning. Religion, in this view, produces and maintains social cohesion by offering *plausibility structures*, or interpretive templates, through which baffling or otherwise unendurable events are processed and resolved into an overarching order (p. 44–45). In this way, religious doctrine frames ordinary events with “an all-encompassing sacred reality,” while providing a rationale in which “the more extreme marginal situations...have a place within a universe that makes sense” (Berger p. 44).

⁵ Issues in this literature include whether religiosity is ultimately individual, as William James proposed, or communal, as Emile Durkheim argued (Joas, 2000, p. 71), and whether sociologists can learn more studying individual phenomenology or aggregate statistical trends (Yamane & Polzer, 1994, p. 20).

Another function of religion is to provide a protective shield against meaninglessness, of which death delivers a constant reminder, and to assure believers that there is a deeply significant existence after life rather than a terrifying chasm of nothingness (Berger, 1969, p. 44). Strozier and Terman (2010) echo this claim by noting that “religion is the human institution assigned the task of providing answers to the ineffable questions of beginnings and endings, both of which fall well outside of social science,” and therefore require a spiritual answer (p. 7). While this legitimating process works at the societal level by resolving anomalous events that affect large numbers, such as war or major disaster, it serves the same role for the individual who has been socialized in, and has internalized, those plausibility structures (p. 44–45).

Plausibility structures, in fact, have a parallel in the psychological literature. Janoff-Bulman and Timko (1987) note that just as social classifications serve the collective order, *schemas* provide ordering patterns for the individual faced with unprocessed information (Janoff-Bulman & Timko, 1987, p. 137). Schemas act as “pre-existing theories that guide what we notice and remember, as well as how we interpret new information” (p. 137). While they are resistant to change, schemas can evolve in small increments over time (p. 140). Thus, schemas serve a critical purpose in reducing uncertainty and instability in daily life, but they can also prevent the integration of new threat information if that information challenges their essential structure (p. 140). The implications for religious interpretations of disaster preparedness are not explored in these studies; however, the concepts form a foundation on which to analyze the role of religion in assigning meaning and resolving uncertainty surrounding catastrophic events.

While religion may answer difficult questions, argue Glock and Stark (1965), the phenomenon of religiosity is a highly complex construct in and of itself (pp. 22–23). In an attempt to reduce some of that ambiguity and increase the rigor of sociological analyses, their study establishes categories for understanding the cognitive function and operation of religion, regardless of denomination. Religiosity can be broken down, as it were, into types of beliefs, including “warranting,” “purposive” and “implementing” beliefs (pp. 24–25). “Warranting beliefs” establish the existence and supernatural capabilities of a god or gods, in and of themselves (p. 24). “Purposive

beliefs” concern the fate of humans in the divine order, including their level of abjectness in relation to the divine, and the likelihood and method by which they will be ultimately saved or condemned (pp. 24–25). “Implementing” beliefs” set forth behavioral norms that are expected of humans as they relate to god and to others, including particular rules or laws that guide individuals to act in ways that support a divine plan (p. 25). This study is not informed by the current issues of personal emergency preparedness in the United States. However, since behaviors are guided by beliefs, Glock and Stark’s delineations of belief types makes it possible to identify more precisely where a religious doctrine might align with current concepts of threat severity and response efficacy.

More recently, Yamane (2007) has advanced Glock and Stark’s theory through field research, concluding that “implementing beliefs,” which correspond to “experience and practice,” are more salient to contemporary religious groups than “warranting beliefs,” or core doctrinal tenets (p. 45). Yamane’s work suggests that implementing beliefs have the potential to unite both liberal and conservative congregants through charity activities and other practices, whereas warranting or purposive beliefs tend to create divisions (p. 45). Also, Putnam’s research stresses the social aspect of religion by providing evidence for the influence of religiosity on social connectedness and productivity (2001, pp. 19, 66).

The studies in this section suggest that religious belief systems, as ordering schemas, rely heavily on social bonds, and yet excel in creating them. To the extent that religion can “locate human phenomena within a cosmic frame of reference” (Berger, 1969, p. 35), it has the potential to etch deep interpretive grooves in the believer’s decision processes. As such, these sociological studies serve as a foundation from which to examine the nature of the relationship between religiosity and personal preparedness. While neither Berger, Strozier and Terman, nor Glock and Stark relate their theories to the phenomenon of disaster, they provide general insights into the sensemaking processes conducted by those with strong religious beliefs. Arguably, any believer’s personal risk assessment process will be guided, if not driven, by the broader

interpretive tools acquired through theological teachings and applied spiritual experiences. In this sense, the literature in this section enables one to view FEMA's threat/efficacy model through a theological lens.

d. Sociological and Behavioral Studies: How Religious Groups View Disaster in General

Sociologists have shown ample interest in the phenomenon of natural and manmade disasters, and many do consider the role of religiosity. However, the majority of literature covers people's experience of disaster itself rather than their state of preparedness in times of stability. The time period that appears to be of most interest to sociologists begins when official warnings and evacuation orders begin, through the incident, and during the relief efforts that immediately follow the catastrophe. For instance, Maynard, Gorsuch and Bjork (2001) consider the role of personal religious views in coping with the impact of disaster, while Nelson and Dynes (1976) study the influence of religiousness on altruistic behaviors during an emergency. Other sociologists, such as Turner, Nigg and Paz (1986) and Kroll-Smith and Couch (1987) consider the extent to which people give religious significance to unfolding or completed disasters as ways of relieving their uneasiness about the event.

Sociological literature is not alone in lacking data on the preparedness or warning phase of disaster. In the behavioral science field, as argued by Gheyntanchi et al., (2007), disaster mental health research has traditionally focused on the impact and recovery phases (p. 127), and should be integrated into the planning and mitigation phases (p. 118). This overemphasis on the impact and recovery phases is manifest in the fact that behavioral theories have yet to be applied to personal preparedness beyond FEMA's PDP Model.

As for the influence of religion on personal disaster readiness, there is very little discussion about whether religiosity influences whether an individual will succumb to or mitigate risk when advised to prepare. As Haney, Elliott, and Fussell (2007) suggest, opposing opinions have been put forward with regard to response to official warnings (p. 78), but little attention has been paid to whether religiosity corresponds with either proactive or fatalistic behaviors in the preparedness phase.

There are some findings in the literature regarding the significance that religious individuals attribute to disasters. Turner, Nigg and Paz's study (1986) of California residents living on the San Andreas Fault finds that respondents with strong religious beliefs tend to view earthquakes as originating from nonphysical, mystical causes, and therefore, interpret official warnings in problematic ways (p. 262, 269). Meanwhile, Stern's study (2007) of thought leaders in major world religions, such as mainline Protestantism, evangelical Christianity, Catholicism, Judaism, Islam and Buddhism finds agreement that disasters are neither mystical nor personal messages to humankind, but rather like forces in a massive set of physical laws (pp. 216–218). In any case, neither study suggests why religious people might be better prepared and how they assess risk.

Few substantive studies in this category directly address why religious people in the United States might find value in preparedness in the absence of an impending, officially announced incident. It is noteworthy that sociologists seem much more inclined to focus their studies on the most dramatic phases of disaster—when it is dangerously imminent, unfolding, or just passed—rather than the less newsworthy phase of preparation, when no immediate threat is present.

e. Millennialist Theology: The Ultimate Catastrophe and How to Prepare

Thinking about disaster, for some individuals, may prompt a consideration of the worst case scenario: one's own death and the end of human civilization. For the very religious, this scenario is covered by theological teachings with varying degrees of specificity. These teachings provide overarching belief structures that may have relevance to the motivation to prepare, or not prepare, for a disastrous or catastrophic event.

An issue that has drawn considerable attention from researchers is the eschatological—or end-times—narrative, as well as its expressions among various faiths (Luebbers, 2001; McMinn, 2001; Wilcox, 1994). End times theologies hold important relevance because deeply held beliefs about final events serve as master narratives that frame individual considerations of catastrophic events, as well as the efficacy of

preparing one's own survival in advance (Cox, 1995, p. 291; Wojcik, 1997, p. 172–3). Among eschatological beliefs, one particular version is *millennialism*, which predicts a complete transformation of the known world into a higher order of existence, including the final distribution of eternal reward and punishment (Robbins & Palmer, 1997, p. 9; Wilson, 1963, pp. 96–97). Specifically, the Christian version of millennialism predicts the second coming of Christ as the ultimate transcendent event.

While the millennialist vision is not unique to Christianity, the main focus of this section is on millennial doctrines predicting Christ's return. Christians as a whole, and especially Protestants, represent the most populous denomination in the U.S (Pew Research Center, 2008); and some form of millennialist belief can be found in most Christian denominations, including Roman Catholics, although they may not call it by that name (Robinson, 2009). Since this research project uses FEMA's survey results as its starting point, and FEMA's survey represented a cross-section of American households, it is likely that the respondents who identified themselves as "strongly religious" were mostly protestant. However, the objective of this research is to explore the influence of religious beliefs on views of disaster preparedness; therefore, the denomination of the believer is not as important as their holding religious eschatological views that may influence interpretations of existential threats.

A great deal of scholarship and debate on the nature and timing the Christian millennium has taken place among both theologians and sociologists. Theologians, overwhelmingly Protestant, have asserted particular doctrinal views to support their interpretation of scripture. Meanwhile, sociologists of religion have translated these views for the lay reader and analyzed their social implications. For this reason, the following section surveys both theological and sociological literature to define the principal millennial eschatologies found in Christian faiths, as well as the implications of these beliefs on individual and group behaviors. In general, the literature provides valuable insights into millennialist eschatologies; however, little is known about the link between these doctrines and personal preparedness attitudes.

A debate in Christian theological literature centers of the timing and sequence of key milestones in the final fulfillment of biblical prophesy.⁶ The three main camps—*premillennialism*, *postmillennialism*, and *amillennialism*—all believe that a literal or figurative period of one thousand years (millennium), marked by Christ's rule over a perfect kingdom on earth, will precede the final end of physical human existence, the last judgment, and eternal unity of saved souls with God (Bock et al., 1999, p. 283, Cox, 1995, p. 288, Virkler & Ayayo, 2007, p. 178). However, because each doctrine interprets prophetic biblical passages, such as *Revelations* 20 and *1 Corinthians* differently (Bock et al., 1999, p. 300; Virkler & Ayayo, 2007, p. 178), they disagree on the timing of Christ's second coming in relation to the start of the millennial reign (Introvigne, 1997, p. 230; Shupe, 1997, p. 196). This carries implications, such as 1) whether believers will be subject to the period of catastrophic suffering called the great tribulation; 2) whether evangelizing efforts should be on an societal or an individual level; and 3) what role Christians ought to take in facilitating and preparing for the second coming of Christ, (Bock et al, 1999, pp. 283–290; Cox, 1995, p. 288; Shupe, 1997, p. 196).

As would be expected, these three doctrines exert varying degrees of influence on believers' interpretations of current world events, including natural and man-made disasters, catastrophic suffering, and other existential threats (Wojick, 1997, p. 172). Overall, the research in this section provides useful distinctions between the various apocalyptic eschatologies, each of which have their own conceptions of existential threats and their own vulnerability in light of those threats. As such, there is the opportunity for significant insight into personal risk assessment from a theological perspective, which could influence whether a believer takes a proactive approach rather than a passive resignation to the threat of disastrous events.

⁶ Christians are not the only religious group that posits end times eschatologies, nor are they the only religious group that believes in a millennial precursor to the end of earthly civilization. (See, for example, Bock, 1999, p. 300; Greeley, 1990, pp. 99–100).

2. Premillennialism

The literature offers varying perspectives on the evolution of this doctrine over the last few centuries; however, the general consensus is that premillennialists tend to take a pessimistic and highly vigilant approach to the end in comparison to their postmillennialist counterparts. This doctrine is also known as “catastrophic millennialism,” “apocalyptic millennialism,” and “millenarianism” because of its emphasis on the cataclysmic nature of the second coming of Christ (Partridge, 2008, p. 192). It assumes a literal interpretation of Revelations as a precise roadmap for the end (Virkler & Ayayo, 2007, p. 179, Bock et al., 1999, pp. 288–289, 302; Walls, 2008, p. 13), and forecasts Christ’s return as a sudden event outside the control of believers and nonbelievers alike (Virkler & Ayayo, 2007, p. 178; Cox, 1995, pp. 288, 291; Robbins & Palmer, 1997, p. 9, Shupe, 1997, p. 196). According to premillennialists, the second coming of Christ will arrive upon an increasingly declining civilization and will be signaled in part by natural disasters and other world catastrophes representing God’s wrathful judgment against Satan and sinful humanity (Virkler & Ayayo, 2007, p. 178; Cox, 1995, pp. 288, 291; Bock et al., 1999, p. 283; Wojick, 1997, p. 172). This disastrous 7-year chain of events, ruled by the antichrist, is known as the great tribulation; the only action believers can take is to save as many souls as possible in time for the rapture (Macchia, 2008, p. 284; Wilson, 1963, p. 98). In the rapture, saved Christians are elevated up to meet Christ in heaven for eternity (Robinson, 2010).

The great tribulation and the rapture are sources of dispute among premillennialist theologians. While they agree that Revelation is a precise forecast of what will happen leading up to Christ’s return, the disagreement centers on the exact timing of the rapture and the fate of saved Christians during final events (Walls, 2008, p. 13). The distinctions among competing views provide important insights into the possible underpinnings of proactive or passive approaches to major disasters. *Pretribulationists* believe that the saved will be raptured in advance of the catastrophic end times events, and thus avoid the tribulation altogether. *Posttribulationists* posit that the saved will be subject to the tribulation but be raptured after it is over. *Midtribulationists* assert that the saved will be exposed to some of the suffering but be raptured midway (Warren, 2010). As the

tribulation is expected to be rife with catastrophic events, this ideological distinction may influence how Christian citizens estimate their vulnerability and their anticipated response to highly impactful disastrous events.

In general, theologians representing the premillennialist position believe they have access to salvation; however, their teachings are considered in the literature to be relatively pessimistic. The forecast is that existence will become much worse before it gets better (Shupe, 1997, p. 196; Introvigne 230; Almond, Appleby & Sivan, 2003, p. 68). Since believers characterize Christ's return to earth as a massive course correction imposed upon a dissipated civilization, it forecasts the role of Christians as minimal and therefore, some argue, tends to foster fatalistic and passive views of either disastrous events or perceived decadent societal trends (Robbins & Palmer, 1997, pp. 9, 40; Shupe, 1997, p. 196; Cuneo, 1997, pp. 178, 191). Yet, while premillennialists may believe that organized political and social action is to no avail in changing the course of history, they place considerable stock in energetic outreach and vociferous warnings in order to help nonbelievers convert and fare well in the afterlife (Bock et al., 1999, p. 307, Shupe, 1997, p. 196; Almond, Appleby & Sivan, 2003, pp. 68–69; McMinn, 2001, pp. 208, 212). Taken to its extreme, this form of eschatological hyper-vigilance can lead to sectarian splits characterized by dangerous isolationism (Bromley, 1997, p. 39). Premillennialism tends to be found within conservative protestant evangelical denominations, fundamentalist Christians, and the more expressive religions, such as Charismatics and Pentecostals (Whalen, 2000, p. 128; Shupe, 1997, p. 196; Yamane, 2007, p. 41).

3. Postmillennialism

While the literature reveals a number of inconsistencies within this school of thought, the broad consensus is that postmillennialists take a relatively optimistic view of end times, as well as the church's role as active supporter of Christ's intention for the world. The postmillennialists read *Revelations* as a symbolic text, preferring to glean actual end times events and chronology from earlier books, such as 2 Peter (Bock et al., 1999, p. 289) and in some cases, the Pentateuch (Shupe, 1997, p. 195) and specifically Genesis (Cox, 1995, p. 289). The intermediate reign, for postmillennialists, follows a

gradual and universal conversion to Christianity (Robbins & Palmer, 1997, p. 9; Cox, 1995, p. 289), which is accomplished in great part through assiduous preparatory efforts by Christian believers, who organize both socially and politically to build the ideal Christian civilization (Cox, 1995, pp. 298–290, Bock et al., 1999, p. 283, Bloesch 1978, p. 237, Virkler & Ayayo, 2007, p. 178, Robbins & Palmer, 1997, p. 9, Shupe, 1997, p. 196–7; Almond, Appleby & Sivan, 2003, p. 69). Once the Church has succeeded in transforming the world into a fully Christian society, the reign of perfect peace begins on earth, to be followed by a seamless transition into eternal unity with God (Virkler & Ayayo, 2007, p. 178, Bock et al., 1999, p. 283, Cox, 1995, p. 289). As such, postmillennialism does not project an apocalyptic or catastrophic end in the way that the premillennial narrative does. Rather than reaching out to caution fellow humans of imminent end, postmillennial energies are spent toward improving affairs in current society and mending failed institutions (McMinn, 2001, p. 211).

In postmillennial eschatology, church-building efforts figure prominently into the triumphal progression of events (Bock et al., 1999, p. 305; Robbins & Palmer, 1997, p. 9). As such, the postmillennial narrative tends to foster both empowerment and obligation to prepare the way for Christ’s reign by creating an improved earthly existence in the here and now (Cox, 1995, p. 289, Almond, Appleby & Sivan, 2003, p. 69). Unlike catastrophic millennialists, postmillennialists take a long and measured view of the end, being less likely to rush to activism when world events seem unsettling (McMinn, 2001, p. 212). As one theologian states, “the Lord’s glorious return occurs *after* an era of ‘millennial’ conditions,” and therefore “the postmillennialist confidently proclaims in a unique way that history is ‘His story’” (Bock et al., 1999, p. 14, emphasis in original). Not only is political and social activism useful, it is required in order to bring about universal conversion (Bock et al., 1999, p. 283, Almond, Appleby & Sivan, 2003, p. 69). Postmillennialist views can be found among mainline and moderate protestant denominations (McMinn, 2001, p. 211).

4. Amillennialism

Theologians generally agree that amillennialists, like postmillennialists, place the second coming of Christ at the end of the thousand-year reign on earth. In amillennialism, however, the thousand year reign has already been initiated with the death and resurrection of Christ and will be made fully apparent at the second coming of Christ (Walls, 2008, p. 13). Unlike their counterparts, amillennialists believe that the church plays no active role in the thousand-year reign, serving only as a “faithful witness” (Bock et al., 1999, p. 306), and the millennium is a figurative span of time “in the hearts of believers” that elapses between Christ’s first and second coming (Virkler & Ayayo, 2007, p. 178). For Amillennialists, biblical prophesy is interpreted metaphorically and without particular adherence to linear time (Virkler & Ayayo, 2007, p. 178; Bock et al., 1999, p. 287). In fact, the teaching sets no particular milestones leading up to the final crossing into eternity, and provides no role for the church to aid the process; it is entirely dependent on divine will and chronology (Bock et al., 1999, p. 306). In this sense, amillennialist attitudes toward end times occupy the middle ground between pessimism and optimism (McMinn, 2001, p. 209). Amillennialism can be found in Christian denominations including Anglican, Lutheran, Orthodox, Reformed, Roman Catholic, and some Baptists (Robinson, 2009)

Grenz (1992) has used the terms “optimism,” “pessimism” and “realism” to describe the way postmillennialists, premillennialists and amillennialists, respectively, view their life purpose and role in society (pp. 175–195). In fact, these distinctions are common among theological and sociological researchers of biblical prophesy. These distinctions, however, are broad and do not reflect the complex variations that occur within churches and denominations. Nevertheless, the literature in this section reveals the ways in which millennialist doctrines might influence assessment of both personal risk and the value of personal preparedness when it comes to major catastrophes.

a. Implications of Millennialist Theology: Personal Control, Social Engagement and Scripting

As with the preceding section, the majority of research aimed at religious groups in the United States appears to be on Christian denominations, particularly

Protestant, and to a lesser extent Roman Catholics and other groups. A significant area within the sociological literature concerns the application of the Christian millennialist theories among denominations and sects. The social implications fall along a spectrum of behaviors ranging from constructive, altruistic community-building, to paranoid, violent extremism (Strozier & Terman, 2010, pp. 6-7; Cuneo, 1997, pp. 178–80; Lawson, 1997, pp. 221–224). One theologian notes that “millennialism can be either quietist or activist, political or apolitical, gentle or violent...” (Weber, 2007, p. 380), however, the preference in the literature appears to be with the sectarian groups at the ends of the spectrum, such as Christian reconstructionists on the side of social activism (Shupe, 1997, pp. 195–196) and Catholic apocalypticists on the side of extreme reclusiveness (Cuneo, 1997, p. 179).

Fringe groups aside, little is known about the connection between the various millennial views and disaster preparedness trends in the United States. However, as a starting point, some key distinctions have emerged with respect to the social dimensions of different end-times theories.⁷ The literature rarely connects these theologies to personal preparedness; however, this area of research has relevance in understanding the personal risk assessment process conducted among the very religious.

First, the literature suggests that various end-times theories differ in their estimation of personal control over end-times events. For example, Walls (2008) notes that the more a believer defers the millennium to the future, where Christ will return and manage the entire transformative process, the less they believe they can control the timing and the outcome of the event, resulting in a submissive approach to cosmic events (pp. 12–14). As such, the future-focused premillennialist, for whom the second coming is catastrophic and chronologically random, may lack motivation to improve the present conditions beyond converting nonbelievers (p. 14). Conversely, argues Walls, the more a believer perceives the millennium as a currently unfolding process with phased improvement that is led by the church (2008, p. 14). Put another way, postmillennialism

⁷ For the purposes of the review that follows, references to postmillennial groups will include amillennial believers as well, since there are no significant differences between the two as it concerns these overarching themes.

perceives the second coming as an iterative movement in which Christians enjoy a comparatively higher degree of predictability and controllability.

A second theme in the literature indicates that eschatological theories differ in the extent to which they foster organized social action. For example, Grenz (1992) notes that since premillennial eschatology places the fulfillment of prophesy exclusively in the future, the believer's worldly existence is fundamentally detached from the idealized consummation of prophesy (p. 185). This can, on one hand, lead to social disengagement and fatalism, and on the other hand, foster a deeply individual and personal connection with God (p. 185). In contrast, since postmillennial beliefs indicate that Christ's return is visible only through the growing importance and dominion of his church, believers perceive their own empowerment in facilitating society's movement toward a universal Christian church (p. 121).⁸

It is made clear in the sociological literature that eschatological narratives order perception of end times and the Christian's role, specifically, the amount of personal control over disaster events, and the value of social engagement in the preparatory process. However, *mechanism* by which theological narratives exert this cognitive influence can be ascertained by turning to the behavioral science literature. Abelson (1981) has established a relevant theory on the function of cognitive *scripts* that regulate understanding and memory of event-driven phenomena (p.716–717). When considering a future or hypothetical event, an individual locates the event in a learned cognitive script, which acts as an “expectation bundle” and aids the individual in linking past, current and potential events into some causal order (p. 717). When inferences must be made in the absence of complete information, scripts serve to “fill in the gaps” for a

⁸ There is evolving notion in the literature of how effective the pre- and postmillennial expressions are in society. As noted above, researchers have historically conferred a fatalistic pessimism on premillennialists and an empowered optimism on postmillennialists. More recently, however, Phillips and Okholm (1996) call attention to the stereotypical nature of designations, such as pessimism, optimism, activism and fatalism to the various end-times scenarios (p. 123). Arguing that these well-worn distinctions should be more critically examined, Phillips and Okholm question the assumption that organized social action is more effective than countercultural detachment, and note that Christian groups who have worked within existing social systems have historically co-opted the systematic injustices and ills of the establishment without questioning them (pp. 123–124). In this light, the strength of premillennialism is underestimated, as its distrust of current social structures (as expressed in “expectation of a new heaven and earth, qualitatively different from the present”) fosters the creation of “radically new ideas” with potential for transformative social changes (p. 124).

relatively coherent whole (p. 717). In order to move from perception to actual behavior, both the script itself and the context for enacting it must both be present; at that point, “the individual must *enter* the script” (p. 719, emphasis in the original). This theory has been invoked by Robbins and Palmer (1997) who note that certain “scripted catastrophic scenarios” can provoke violence in fervent religious apocalyptics who experience stress (p. 5). Nevertheless, the concept of scripting has not been applied to the issue of personal preparedness among the general religious population in the United States.

Among the various themes in the literature on implications of millennial movements, there are very few instances in which the connection is made between the theology, its manifestation, and inclination toward personal material preparedness. Whether and how end-times scripts translate to perceptions of *threat severity*, *threat susceptibility*, *self-efficacy*, and *response efficacy* has not been empirically explored.

5. Conclusion and Questions

Field research on disaster preparedness has demonstrated that personal preparedness is insufficient in the United States. It has also suggested that religious people might be more prepared, with a specific finding of high self-efficacy among Latter-Day Saints. However, the literature has not explored in depth why such a correlation would exist among a cross-section of U.S. households. Behavioral and sociological literature examines the internal and external reasons why an individual or a segment of the population might be underprepared; however, it does not explore the influence of religious beliefs in the risk assessment phase prior to impact. Literature on the sociology of religion explores the nature and impact of religious beliefs on a person’s life, but it does not explore this same impact when it comes to disaster preparedness. Finally, Christian millennialist theories indicate that perceptions of the apocalypse vary among Christians, as do perceptions of the imminence, predictability, and controllability of end times events. However, neither the theological, sociological nor behavioral literature examines the impact of religion on assessments of *threat severity*, *threat vulnerability*, *self-efficacy* and *response efficacy*. This gives rise to the key research questions for this thesis:

3. How do individuals with strong religious beliefs—particularly regarding end-times prophesy--assess their personal disaster risk and make decisions about whether to prepare?
4. In terms of the Personal Disaster Preparedness Model (Citizen Corps, 2006, p. 3), how do end-times beliefs affect the believer's perceptions of:
 - a. the likelihood a natural or manmade disaster will affect them personally
 - b. the severity with which a disaster will impact them and/or their community
 - c. their own capability to enact the necessary preparations; and
 - d. the usefulness of completing FEMA's recommended personal preparations
5. How could DHS leverage this knowledge in furtherance of its citizen preparedness mission?

In order to understand the role of religious beliefs within FEMA's preparedness mission, it would be necessary go beyond the current literature and begin tying together the phenomena of disaster, behavioral decision theory, and religiosity—in this case, Christian millennialism. For the most part, the literature treats these three disciplines separately, yet there are opportunities to begin synthesizing them by gaining more empirical knowledge about what motivates religious citizens to prepare.

THIS PAGE INTENTIONALLY LEFT BLANK

III. RESEARCH METHODOLOGY

The methodology of this thesis has been designed to identify and describe how individuals with deeply held beliefs in end-times prophecy assess their personal disaster risk and make decisions about whether to prepare. The focus group questions, as well as the findings reported, align with FEMA's Personal Disaster Preparedness (PDP) Model. The PDP Model maps individuals' responses against four belief constructs that serve as behavioral framework for personal preparedness. The model also pinpoints the attitudes or beliefs that might block a person's motivation to mitigate their own risk by completing the recommended preparedness measures.

A. RESEARCH QUESTION

How do individuals with deep religious beliefs—particularly regarding end-times prophecy—assess their personal disaster risk and make decisions about whether to prepare?

B. HYPOTHESIS

As shown in the previous chapter, deeply held end-times beliefs often include theories of how the end of days will occur and how believers will figure into the final transcendence. Christian millennialist beliefs include narratives that may foster anticipatory contemplation of worst-case scenarios. Viewed through FEMA's Threat/Efficacy model, these end times beliefs may influence a believer's perception of: 1) their *vulnerability* to disasters; 2) the *severity* of the damage that could befall them; 3) their own *self-efficacy* in protecting or saving themselves; and 4) the *response efficacy* of suggested preparedness behaviors to make a difference when disaster hits (Citizen Corps, 2006, p. 3).

The hypothesis of this study includes the following claims:

- To the extent that a millennialist theology frames one's interpretation of current and future events, it has influence on the believers' assessment of personal disaster risk and their resulting Threat/Efficacy profiles.
- The threat/efficacy profile aligned with effective personal preparedness requires simultaneous feelings of vulnerability (to the threat and its impact) and empowerment (to mitigate personal risk by performing recommended preparations).
- This paradoxical vulnerability/empowerment mindset has an analog in millennialist theology, which prescribes powerlessness over the timing and nature of final events, combined with confidence in one's own ability to strive for salvation.
- The individual decision to prepare for disaster, however, is not motivated solely by compelling eschatological beliefs. For millennialists, anticipatory contemplation of serious disaster, in and of itself, will probably be more spiritual than practical. As a result, *emotion-focused coping* will be chosen over *problem-focused coping*.
- Without social norms that foster enactment of material preparations, religiosity will likely support *emotion-focused* coping over *problem-focused* coping.

The hypothesis of this study is:

Millennialist beliefs influence personal disaster risk assessment by spiritualizing the risk appraisal process, including likelihood of impact, severity of impact, efficacy of responding, and ability to prepare. The millennialist approach is likely to elevate spiritual preparation (emotion-focused coping) over material preparation (problem-focused coping), unless faith-based social practices specifically foster material preparedness activities.

C. THE PURPOSE OF THE STUDY

The purpose of this research is to begin defining the relationship between religious end-times beliefs and attitudes about personal disaster preparedness in the United States (U.S.). Using FEMA's field survey data as a starting point, which reveals a

positive correlation between general religiousness and completion of personal preparedness tasks (Citizen Corps, 2009, p. 44), this thesis focuses specifically on the link between millennialist beliefs and perceptions of threat, self-efficacy and response efficacy. There is no substantial literature base tying eschatological belief systems to attitudes about proactive disaster resilience.

This study has been designed to collect and analyze primary source data by engaging with members of the public who reports holding strong beliefs in biblical end-times prophesy. Focus groups were convened and queried in order to identify and describe how millennialism adherents assessed their personal disaster risk and made decisions about whether to prepare. The focus group questions, as well as the findings reported, align with FEMA's Personal Disaster Preparedness (PDP) Model. The PDP Model maps individuals' responses against four belief constructs that serve as behavioral framework for personal preparedness. The model also pinpoints the attitudes or beliefs that might block a person's motivation to mitigate their own risk by completing the recommended preparedness measures.

D. THE NATURE OF THE STUDY AND THE SUITABILITY OF A QUALITATIVE APPROACH

In order to test the hypothesis that millennialist beliefs spiritualize disaster risk assessment and promote emotion-focused coping, empirical data was needed as a basis for any preliminary conclusions. A qualitative approach to data collection and analysis was chosen for this study, as opposed to replicating FEMA's quantitative approach.

There are several reasons why the qualitative approach is appropriate to this research objective. When a relationship between two phenomena is undefined, qualitative studies enable the researcher to begin identifying connections when the literature has not provided any (Leedy & Ormrod, 2010, p. 107). In addition, the research approach employed in this thesis follows recommendations in the report of the Citizen Corps 2009 survey, which call for further "[q]ualitative research such as focus groups or interviews to explore more fully how individuals understand the issues of threat, self-efficacy, and response efficacy and to explore internal and external barriers and

motivators to preparedness” (Citizen Corps, 2009, p. 8). Primary source data obtained in this study add insight to survey findings by glimpsing specific experiences of individuals who fit FEMA’s “religiousness profile” (Citizen Corps, 2009, p. 44) and generating detailed examples of interactions between millennialist beliefs and thoughts of preparedness.

E. THE DATA COLLECTION METHOD: FOCUS GROUPS

A focus group is, in its broadest sense, a group interview focusing on a specified subject (Patton, 1990, p. 335, Maxfield & Babbie, 2009, p. 196, Leedy & Ormrod, 2010, p. 148). In social science research, focus groups tend to include a range of 5–15 people (Maxfield & Babbie, 2009, p. 195, Leedy & Ormrod, 2010, p. 148, Patton, 1990, p. 335) and last 1–1.5 hours. A focus group resembles an interview in that the researcher seeks personalized and in-depth qualitative data; however, a focus group is unique in allowing information to flow in a social atmosphere, where participants can discuss their views in relation to others’ and form their responses in the context of the group (Patton, 1990, p. 335). It is important to note that focus groups are not decision-making or problem-resolution tools, and there is no requirement to reach consensus, nor is there an expectation that participants debate opposing viewpoints (Patton, 1990, p. 335). Rather, the focus group forum allows individuals to consider interview questions in a group setting (Maxfield & Babbie, 2009, p. 195). In this specific study, the focus group questions were designed to assess participants’ own experience and perceptions as they relate to personal preparedness, and the extent to which their end-times beliefs inform their motivation to prepare.

The selection of focus groups as the data collection method is based on a number of factors. First, arguably, both disaster preparedness and religious worship may both require social reinforcement to be sustained. Therefore, the focus group methodology aligns with the process by which individuals might ponder and come to decisions on their faith (as in their settings of worship) and their personal preparedness (as in their community or neighborhood settings). A second reason for utilizing the focus group forum is that it provides a streamlined process for gathering data. Much more

information can be gained in 1–2 hours than might be possible if interviewing each person separately, and consistencies of perception across the group can be identified relatively quickly (Patton, 1990, p. 335–6). A final factor in choosing the focus group method is that participants generally find group sessions more enjoyable and comfortable than individual interviews (Leedy & Ormrod, 2010, p. 148, Patton, 1990, p. 336). Given the nature of the topic and the potential of discussing existential concerns, the group setting was designed to provide a basis for fostering trust between the researcher and the participants.

F. OVERVIEW OF SAMPLING AND RECRUITMENT PROCESS

A purposive sampling method guided the recruitment process for this study. Unlike probability sampling, which relies on a random selection process, purposive sampling relies on the researcher's judgment of which individuals would be most appropriate to the goal of the research (Maxfield & Babbie, 2009, p. 317). Since this thesis explores the relationship between personal risk assessment and millennialism in the United States, the purposive sampling approach focused on individuals who consider themselves very religious and whose religion incorporates a millennialist end-times theory.

The sampling ultimately centered on members of Christian faiths, including Catholics, because these were the individuals to whom the researcher had the most access. As the researcher does not practice a particular faith, the researcher relied a great deal on social networks of trust to gain the confidence of the participants. In order to do this, religious colleagues, friends and family members were engaged to act as points-of-contact (POCs) to hand out the researcher's recruitment letters. The POCs did not participate in the study.

The sampling approach was relatively open and inclusive; individuals in Christian faiths were recruited without specific regard to denomination or particular millennialist doctrine. The approach was also largely iterative; groups emerged through circles of trust and social capital among the deeply religious. The participants' particular theologies were determined to be less important than the depth of their faith and the extent to which

they relied upon it in decision making. Additionally, doctrinal distinctions held less importance than the level of trust and comfort with which the participants entered the research project. In most cases, the responding participants were members of the same church or community; however, participants did not act as representatives of any church or secular institution, but rather as individual members of the public.

It should be noted that this sampling process did not control for age, socioeconomic status, race or national origin, geographic location, or any other factors. For this reason, this study, if replicated, would not necessarily result in similar findings.

G. FOCUS GROUPS: PARTICIPANTS, PROCESSES AND QUESTIONS

Focus groups were held in the months of June and July of 2011, and they were arrayed as follows:

Table 1. Composition of Focus Groups

Location	Number of Participants	Self-Reported Denominations
Lincoln, CA	2 groups of 9	Mixed Catholic and Protestant
Spokane, WA	1 group of 10	Protestant Non-Denominational
Teleconference with participants from: *Washington, DC metro area (Maryland) *Hastings, MN *Chicago, IL *Iola, KS	1 group of 8	Mixed Catholic and Protestant
Totals	4 groups 34 total participants	

Focus groups met for an average of one and a half hours. In one case, the focus group was held via teleconference to accommodate the geographic distance between the participants. At the beginning of the session, a prewritten introductory script was read to the participants. During the session, questions and discussions were aimed at

determining how end times beliefs influenced personal risk assessment and the decision to prepare. Following the end of the session, the researcher stayed for an additional 30 minutes to be available to participants who wished to add information, clarify something that they had discussed during the session, or ask questions about the research.

The researcher took detailed notes during the focus groups and captured quotes from participants as needed. When written consent for audio recording was obtained, which occurred in one case, the focus group session was recorded using a digital voice recorder. After the meeting, the recording was transcribed and quotes were gleaned from this transcription. The focus group questions and the coding elements are listed in Table 2.

Table 2. Method for Capturing and Coding Focus Group Data

Research question	Focus Group Questions	Coding Elements
How prepared are the participants, according to FEMA's guidelines?	Have you assembled a preparedness kit or survival kit in the event of a disaster in which emergency services are not available for 3 days? Do you have a household emergency plan in case of a major disaster? Do you conduct exercises or drills related to your household plan?	Responses were coded as: *Little or no completion *Some completion *Full or nearly full completion
What are the participants' perceptions of <i>threat susceptibility</i> ?	What do you think is the likelihood of a natural disaster ever happening in your community? What about a human-caused disaster such as acts of terror or toxic releases/spills? What about a pandemic disease outbreak?	Responses were coded as: *Extremely likely *Very likely *Somewhat likely *Barely likely *Not likely
What are the participants' perceptions of <i>threat severity</i> ?	If such a disaster happened in your community, how severe would the impact be?	Responses were coded as: *High severity/impact *Medium severity/impact *Low severity/impact
What are the participants'	Do you think that preparing in advance for disaster would make	Responses were coded as: *High response efficacy

Research question	Focus Group Questions	Coding Elements
perceptions of <i>response efficacy</i> ?	a difference, were a disaster to occur? Why or why not?	*Medium response efficacy *Low response efficacy *Religiously motivated *Non-religiously motivated
What are the participants' perceptions of <i>self-efficacy</i> ?	Do you believe that you personally are able to protect yourself from a disaster? Why or why not?	Responses were coded as: *High self-efficacy *Medium self-efficacy *Low self-efficacy *Material preparedness *Spiritual preparedness
What do participants perceive as their primary <i>motivation to prepare</i> ?	What would be the main factor that has motivated (or would motivate) you to prepare your household for a disaster? Why does that motivate you?	Responses were coded as: *Training/past learning *Practical survival *Experience with disaster *Obligation to others
Follow-up to previous question: what is the role, if any, between their religious beliefs and their motivation to prepare?	How have the following influenced your attitudes or decisions about personal preparedness, if at all? *Scriptures /Teachings *Church teaching/counsel/advice *Church practices/social norms *Personal experiences in the church	Responses were coded as: *Scripture/Teachings *Premillennial *Postmillennial *Amillennial *Non-theological worldviews

Each focus group question was based on a research question designed to explore the personal risk assessment process of the individual participant, as well as any religious or nonreligious end-times beliefs that impacted this assessment. Initial coding elements were set up as a way of providing containers for each piece of information that was offered during the focus group. These initial categories helped to organize the note-taking process, and they helped to set up crosswalks between concepts discussed in the theoretical literature and empirical data being verbalized. As unique and unexpected information came forth, data were captured and then reviewed to determine whether they could be integrated into the coding schema or whether they suggested the need for new categories.

Data analysis followed the method suggested by Creswell (1998) in which the researcher first organizes the unitary points of data through the coding process described

above. Then, following thorough review of the overall data set as an aggregate, the researcher classifies data into thematic groupings based on trends that emerge. Finally, the themes are synthesized into new knowledge categories, concepts or arguments (Creswell, 1998, as cited in Leedy & Ormrod, 2010, p. 153). The researcher analyzed all raw data and performed a content analysis, identifying patterns and themes in the data. These patterns and themes informed the data analysis and reporting process that follows in the next chapter.

H. DATA VALIDITY, RELIABILITY AND LIMITATIONS

While the quantitative approach and the focus group methodology are appropriate to the research goals of this thesis, they have some limitations that should be acknowledged.

1. Generalizability

The qualitative approach, in general, can yield detailed and in-depth information about a set number of people or cases, which provides significant understanding of those cases but does not lend itself well to generalizability (Patton, 1990, p. 14). Therefore, while this study will provide a window into the perceptions of 34 individuals, those findings cannot easily be transferred to the larger U.S. population. Furthermore, due to the sampling method, which did not control for factors beyond religiosity, any attempts to replicate this study could yield different findings. It is not the goal of this research to create generalizable conclusions; rather, the findings resulting from this methodology can begin laying the groundwork for future studies by pointing to ways in which future survey instruments could be designed.

Data *reliability* refers to the extent to which a situation can be described or judged identically two or more observers viewing the same situation (Leedy & Ormrod, 2010, p. 93, Maxfield & Babbie, 2009, p. 225). Reliability of data increases the more immune it is to personal or idiosyncratic interpretation (Maxfield & Babbie, 2009, p. 225). Because it is almost impossible for any human to avoid drawing from personal interpretive frameworks to describe what is observed, quantitative research tends to be weak in this area (Maxfield & Babbie, 2009, p. 225–226). One way to compensate for this weakness

is to focus on recording data with as much detailed precision as possible (225–6). One method of increasing reliability in this project was to audio-record and transcribe sessions when consent was obtained. When audio recording consent was not obtained, the researcher recorded in writing exact spoken phrases that had the most relevance to the research questions, both during and immediately after the sessions.

Data *validity* refers to the extent to which “the intended meaning of the things observed or the people interviewed have been accurately captured” (Maxfield & Babbie, 2009, p. 225). One of the ways to mitigate errors in this area is to seek feedback from the participants to verify that the researcher recorded the information correctly (Leedy & Ormrod, 2010, p. 101). During focus group sessions, the researcher did so by repeating back to participants or summarizing what they had said at intervals, allowing participants to make additions or corrections either during or after the session.

IV. RESEARCH FINDINGS

A. INTRODUCTION AND SUMMARY OF FINDINGS

This study was designed to identify and describe how individuals with deeply held beliefs in end-times prophecy assess their personal disaster risk and make decisions about whether to prepare. The findings reported in this chapter are structured according to FEMA's Personal Disaster Preparedness (PDP) Model. The PDP Model maps individuals' Threat/Efficacy profiles through four belief constructs that form a behavioral framework for personal preparedness. It also pinpoints the attitudes or beliefs that might block a person's motivation to mitigate their own risk by completing the recommended preparedness measures.

All participants' responses are reported anonymously. As recommended by Kreuger (1994, p. 154), transcribed quotations were edited, when necessary, for ease of reading. Below are listed the general parameters of the data collected, as well as the high-level consistencies and inconsistencies among groups and individual participants.

Preparedness:

- Most individuals indicated little or no completion of the recommended preparation measures.

Theological beliefs:

- Participants identified themselves, broadly, as either Protestants or Catholics
- When discussing biblical views, most participants expressed end-times beliefs consistent with either premillennial or amillennial theology.
- Most participants made reference to biblical prophecy and other scriptural teachings when discussing disaster, its impact, and ways of coping with it.

- While self-identified Protestant participants were more likely to cite or read scripture directly, there were no significant differences in personal risk assessment between the two denominations.

Motivations:

- The primary motivations for preparing were not driven by theology; rather, they originated from practical experience, training or exposure to previous disasters.
- Individuals who reported being fully or almost fully prepared cited practical experience, rather than spiritual beliefs, as their primary motivator.
- Most participants indicated that the recommended emergency preparedness measures were not discussed or promoted in their churches or in church activities.

Regional differences:

- Assessments of threat susceptibility, or likelihood of disaster, were influenced to some degree by participants' regional location. Otherwise, location did not create significant differences in personal risk assessment.

Where there is no significant distinction between focus groups with respect to findings, data has been organized into overarching themes that cut across all groups.

Table 3. Findings Summary: Personal Preparedness and the Role of Religiosity

Level of Personal Preparedness	Findings	Role of Religiosity	Applicable literature
Measured by completion of recommended measures: having a kit, a household emergency plan, and exercising the plan.	Most indicated <i>little or no preparation</i>	Consistently, spiritual beliefs motivated spiritual preparedness and intention of helping others, while material or secular concerns motivated actual completion of FEMA-recommended material preparation.	Inconsistent with PDP model; some individuals who reported being fully prepared rated threat severity and susceptibility as low.
	A small minority reported being <i>fully or nearly fully prepared</i> .		

Table 4. Findings Summary: Personal Risk Assessment and the Role of Religiosity

Personal risk assessment factor	Findings	Role of religiosity	Degree of consistency with literature
Threat susceptibility (Likelihood of disaster)	Ranging from high to low. Natural disaster was ranked more likely than manmade disasters, except in the case of Washington DC metro area-based respondents.	Neither premillennialist nor amillennialist theology directly affected perceptions of likelihood. Estimates were wide ranging and dependent on regional characteristics or past experience.	Responses were consistent with the <i>availability bias</i> as discussed in Tversky and Kahneman (1974, p. 1127). Religious beliefs did not affect this bias.
Threat severity (Magnitude of impact, if a disaster occurs)	Ranging from little impact to significant impact.	Estimates that were based on practical experience rated impact as more severe than those estimates based in theology.	Consistent with theory of emotion-focused coping (Folkman & Lazarus, 1985, 1980)
Response Efficacy (Would preparation make a difference?)	High degree of consistency in responses. Response efficacy rated high, for practical as well as spiritual reasons.	When responses were influenced by spirituality, individuals cited general Christian religiosity such as “doing unto others as you would have do unto you,” rather than specific millennialist doctrine as the motivation.	Consistent with Yamane’s theory (2007) that certain values and norms supersede doctrinal differences.
Self-efficacy (Personal ability to prepare)	Relatively low self-efficacy for material preparation; high self-efficacy for spiritual preparation. Spiritual preparedness rated as more efficacious than material preparation.	Spiritual surrender was identified by most respondents as the basis of their sense of self-efficacy. They cited a feeling of power gained by total dependence on God.	Consistent with literature on spiritual surrender as a source of clarity and renewed confidence (Cole & Pargament, 187).

Personal Preparedness:

Participants were asked whether they had completed FEMA-recommended personal disaster preparation measures, including a kit, a plan and drills (Citizen Corps, 2006, p. 3). Individuals assessed their own readiness for a disaster in which emergency services are unavailable for three days.

Overview of Findings:

When considering their total readiness with a kit, a plan and drills, most participants indicated that they were somewhat or minimally prepared. Participants were relatively confident in having enough food, water and medications on hand if without help for three days. However, most reported not having a dedicated emergency kit with FEMA-recommended survival items set aside. A majority indicated that they had no household or family emergency plan.

Exceptions:

In each of the three groups, single individuals indicated they were fully prepared with survival supplies, plans and exercises. Notable comments included descriptions of the family emergency plan:

- Our whole family knows what to do. It's a 3 month walk; there will not be any talking so no need for reliance on grid. It's not the best plan in the world but it will work. We're all spread out so we will meet in one location (Anonymous, Spokane, WA, July 2011).
- When my grandkids visited for the weekend, we practiced our plan with them (Anonymous, Maryland, July 2011).

In the cases of individuals who reported being mostly or fully prepared, there was no consistent pattern with respect to their assessment of threat severity and threat susceptibility. Their answers about the likelihood and severity of impact ranged from low to high. Their preparedness did not appear to correlate with these two elements. This finding is inconsistent with FEMA's assessment of the root causes for lack of motivation to prepare. FEMA's Personal Disaster Preparedness (PDP) Model suggests that high

estimations of likelihood and impact correlate positively with motivation to prepare (Citizen Corps, 2006, p. 3). In this case, some of the prepared individuals rated likelihood and impact low.

1. Threat/Efficacy Levels

a. Threat Susceptibility

Participants were asked to estimate the chances that a natural or manmade disaster would strike in their community, affecting them personally (Citizen Corps, 2006, p. 3).

2. Overview of Findings

As a common finding among all groups, millennialist theology did not directly heighten perceptions of the likelihood of disaster. While religious beliefs played a role in framing the experience of unpredictability and loss, these beliefs did not play a role in estimates of likelihood. Rather, estimates depended on factors, such as regional characteristics, past exposure, training, education or other life experiences.

3. Inconsistencies

Estimates of likelihood were inconsistent between groups and within each group. Participants believed in a range of probabilities, from barely likely to very likely. Answers varied by geographical region, experience, and type of disaster. For this reason, responses to this particular question are categorized by region.

Table 5. Threat Susceptibility Findings by Region

Location	Themes	Relevant or typical quotes
Washington State (Spokane)	Low likelihood. Estimates varied by individual, with no significant distinction in likelihood between natural and manmade disasters.	<p><u>Barely likely</u></p> <p>There is no proven likelihood that a disaster will impact this region. (Anonymous, Spokane, July 2011)</p> <p>We don't live in a place that is touched by disaster. (Anonymous, Spokane, July 2011)</p> <p>My sense of urgency is so low; I operate as if nothing will happen. (Anonymous, Spokane, July 2011)</p> <p><u>Somewhat likely</u></p> <p>I found out that Fairchild [local air force base] is a target. (Anonymous, Spokane, July 2011)</p> <p>There could be a school shooting. (Anonymous, Spokane, July 2011)</p> <p>The mall could be a target; recently, someone put pepper spray or mace in the HVAC system there. (Anonymous, Spokane, July 2011)</p> <p>House fires and single structure fires are very common. (Anonymous, Spokane, July 2011)</p> <p>A disaster can be interpersonal and it can be a mass event like the tribulation; I have had near death experiences. (Anonymous, Spokane, July 2011)</p> <p>I took an emergency preparedness class in college. I don't want to be too free with my faith. (Anonymous, Spokane, July 2011)</p>
California (Lincoln)	Low likelihood.	<p><u>Barely or Somewhat likely</u></p> <p>Maybe the aftershocks of an earthquake. (Anonymous, Lincoln, CA, July 2011)</p> <p>We have wildfires in this region but not in this community. (Anonymous, Lincoln, CA, July 2011)</p>

Location	Themes	Relevant or typical quotes
		<p>We are near the capitol in Sacramento which could be a target. (Anonymous, Lincoln, CA, July 2011)</p> <p>I do not believe this location is a plausible opportunity for a terrorist attack. (Anonymous, Lincoln, CA, July 2011)</p>
Kansas and Minnesota	Range of low to significant likelihood. Natural disasters perceived as more likely than manmade disasters.	<p><u>Barely or Somewhat likely</u></p> <p>We are not a target here. (Anonymous, Minnesota, July 2011)</p> <p>There are Somalian groups in the area but this is less of a threat. (Anonymous, Minnesota, July 2011)</p> <p>The nuclear power plant is a possible target but unlikely. (Anonymous, Kansas, July 2011)</p> <p>I'm more lackadaisical about manmade disasters (Anonymous, Kansas, July 2011)</p> <p><u>Very Likely</u></p> <p>=</p> <p>Natural disasters are likely. We are on higher ground so it would not affect us as much (Anonymous, July 2011)</p> <p>There are floods in town but we live we live high up. (Anonymous, July 2011)</p> <p>We have ice storms that have done a lot of damage. (Anonymous, July 2011)</p>
Washington D.C. metro area	Range of low to significant likelihood. Manmade disasters perceived as more likely than natural disasters.	<p><u>Very likely</u></p> <p>In DC, terrorism is more likely than a natural disaster. We are a big target. (Anonymous, Maryland, July 2011)</p> <p><u>Barely or somewhat likely</u></p> <p>Natural disasters are less likely here. (Anonymous, Maryland, July 2011)</p>

4. Relation of Findings to the Literature

Consistently, individuals' estimation of likelihood depended on their recollection of recent, local or particularly impactful experiences. This estimation process reflects the *availability bias* in the literature, in which consequences most readily imagined or called to mind are the ones most likely to happen (Tversky & Kahneman, 1974, p. 1127). In this model, disasters covered in the press or experienced recently tend to be overestimated, while those difficult to imagine or not familiar in one's experience tend to be underestimated (Fischhoff, Slovic & Lichtenstein, 1982, p. 247; Slovic, 1986, p. 405). Accordingly, participants cited quickly retrievable instances of disaster to form their likelihood estimates. The availability bias is a likely explanation for the unique case of Washington DC area respondents, who were the only participants to rate acts of terror more likely than natural disasters rather than vice versa.

5. Exceptions

The group in Washington State engaged in a uniquely in-depth discussion of likelihood in relation to theology, therefore their inputs are noted as a special case below. The predominant theology expressed in this group was consistent with premillennial pretribulationist beliefs. Although biblical interpretations did not drive participants' estimates of likelihood, they provided context and support for likelihood estimates that had been put forth.

Table 6. Threat Susceptibility Responses by Theme (Spokane, WA):

Themes highlighted in the Washington group	Relevant quotes	Degree of Consistency with the literature
Biblical passages were used to describe the unpredictability of disasters and their significance as indicators of the end of days.	Many Christians feel strongly about this passage in 1 Thessalonians 5: "For you yourselves know perfectly well that the day, for the Lord will come as a thief in the night. . . . Accordingly, then, let us not sleep, as the rest do, but let us keep wide awake and let us be sober." (v. 2, 6)	Consistent with Walls (2008) who notes that premillennialists perceive the end of days as sudden, catastrophic and chronologically random (p. 14).

Themes highlighted in the Washington group	Relevant quotes	Degree of Consistency with the literature
Pessimism: Participants considered the inevitability of disasters as part of a general decline of civilization.	<p>We all believe what it says in Revelations; we see disasters as the birth pangs.</p> <p>Things will get much worse before they get better.</p> <p>The last 15–20 years with the dot com and real estate collapse...now the economy is shaky, the climate is shaky...all the pieces are being pulled out...Everyone is nervous and insecure compared to 20 years ago.</p>	Consistent with Walls (2008) who argues that the more a believer defers the millennium to the future, where Christ will return and manage the transformative process, the less they believe they can control the timing of the event, resulting in a relatively resigned approach to cosmic events (pp. 12–14).
Optimism: Estimations of disaster likelihood were overshadowed by emphasis on calm assurance rather than apprehension and fear.	<p>This should not cause anxiety. We should be calm.</p> <p>Preparedness is not out of anxiety but out of knowing God.</p> <p>There is a purpose. In the final chapters of the book of human history there is discomfort, but disasters give men opportunity to turn their hearts to God.</p>	Consistent with theory of emotion-focused coping in response to situations in which one feels that one has little or no control in a situation. As a response to stress, the emotion-focused coping method aims to manage the emotions as opposed to the problem (Folkman & Lazarus, 1985, 1980; Lazarus & Folkman, 1984).
Estimates of likelihood led to theological discussions of the rapture.	We are under the goal of being ready to miss the revelation. The Lord promises in six or seven places in the bible that if you are ready for him, he will snatch you away from here.	Consistent with Robinson's (2010) description of premillennial pretribulationists who believe that in the rapture, saved Christians are elevated up to meet Christ in heaven for eternity.

a. Threat Severity

This question asked participants to forecast the magnitude of impact resulting from a potential disaster (Citizen Corps, 2006, p. 3).

6. Overview of Findings

Generally, when participants considered and discussed impact from a secular or material perspective, their estimates of severity ranged from medium to high. When considering the issue from a theological perspective, estimates of impact tended to be downplayed. Theologically-influenced responses generalized disaster from a local phenomenon to a divinely controlled event. This appeared to ease or head off anxiety about participants' personal threat susceptibility.

Predictions of medium to high impact resulted from practical estimates of damage, injury and loss, as informed by history of past events in their community and in the world. However, when downplaying or resolving the imagined impact of disaster, many participants made frequent use of biblical references and spiritual beliefs.

Table 7. Threat Severity Findings by Theme:

Themes	Relevant Quotes
Estimations derived from practical experience and past events heightened the perception of impact.	<p><u>High Impact</u></p> <p>In Argentina and the earthquake in Peru, the whole infrastructure went down, lots of people died, and there were roving gangs of people who needed food and water. (Anonymous, Spokane, July 2011)</p> <p>People don't realize how easy it could be for the whole system to go down. (Anonymous, Spokane, July 2011)</p> <p>Even a small single-structure fire or a house fire can cause major damage. I have seen people who have lost entire family business, and this is just on the small scale. (Anonymous, Spokane, July 2011)</p> <p>I know that it would not be hard for the hospitals to be filled up immediately. A bomb at the mall could get things going really quickly, even in this area. (Anonymous, Spokane, July 2011)</p> <p>Recently someone put mace or pepper spray in the HVAC system in the mall. For hours the hospital was flooded, people were</p>

Themes	Relevant Quotes
	<p>freaking out, hospitals had to decontaminate everyone. And this was just one mall. (Anonymous, Spokane, July 2011)</p> <p><u>Medium Impact</u></p> <p>I grew up in Minnesota. We lost people in tornadoes. (Anonymous, Spokane, July 2011)</p> <p>In the recent ice storms we were without power for a long time (Anonymous, Spokane, July 2011)</p> <p>We have floods in town, tornadoes and fires. Small isolated tornadoes have hit close by, and large ones have been just hours away. (Anonymous, Kansas, July 2011)</p> <p><u>Medium to high impact</u></p> <p>A pandemic would affect us a lot because there are so many elderly people living in this area. They would be more vulnerable. (Anonymous, Lincoln, CA, July 2011)</p>
<p>Estimations influenced by scripture and theological concepts tended to downplay the impact.</p>	<p><u>Low Impact</u></p> <p>If I was in hurricane Katrina and I lost everything, it would not make a difference because you put God first in your heart, then possessions and transient things are second to that. (Anonymous, Spokane, July 2011)</p> <p>Armageddon will not take place here – it will be in Europe and the Middle East. We have a sense of dislocation from it. (Anonymous, Spokane, July 2011)</p> <p>Genesis 12 – the lord will bless those who bless Israel. The US is under a blessing because we support Israel, as opposed to Russia, who is under a curse because they don't support Israel. (Anonymous, Spokane, July 2011)</p>

7. Relation of Findings to the Literature

Estimations of impact derived from personal experience were higher than those supported by theological beliefs. These higher estimations reflect a theory in the literature, which states that disaster impact scenarios dramatized in the press or experienced very recently in one's own life tend to be overemphasized (Fischhoff, Slovic & Lichtenstein, 1982; Slovic, 1986, p. 405).

Predictions of impact based on biblical interpretations were lower. They focused on the spiritual aspects of impact rather than any physical or material considerations, and they were somewhat resigned about vulnerability. This is consistent with Grenz (1992) who notes that in premillennial eschatology, the believer can disengage worldly existence from idealized prophesy, turning from control of physical events to seeking a deep individual and personal connection with God (p. 185).

a. Response Efficacy

This question asked participants to determine whether FEMA-recommended preparations would make a difference if a disaster were to strike (Citizen Corps, 2006, p. 3).

8. Overview of Findings

There was consensus among participants that material preparation for disaster would be very useful for practical reasons. However, belief in the efficacy of FEMA-recommended measures, such as assembling a kit, developing a plan and conducting drills, was not particularly driven by millennialist theology. When spiritual reasons to prepare were given, individuals cited general Christian religiosity rather than specific millennialist doctrine as the motivation. Many felt that preparation was part of a duty to meet one's obligations to family, friends and community.

Table 8. Response Efficacy Findings by Theme:

Themes	Relevant quotes
Many responses were pragmatic, indicating the desire to increase self-reliance and avoid panic and personal harm	<p><u>High Response Efficacy – Non-Religious Reasons</u></p> <p>It definitely would make a difference to prepare. In general being prepared is better because you'll hesitate less, if you have thought it through, and you'll come to the conclusion quicker. You'd have your resources around you. (Anonymous, Spokane, July 2011)</p> <p>You need to be prepared even though the likelihood is not high; you must think it through in advance. (Anonymous, Spokane, July 2011)</p> <p>It is important to prepare; the outcome is better when you prepare. (Anonymous, Minnesota, July 2011)</p> <p>The more you prepare, the better chance you have to survive. (Anonymous, Minnesota, July 2011)</p> <p>Seeing the government response [in New Orleans during Katrina] is not terribly impressive. (Anonymous, Spokane, July 2011)</p> <p>If a disaster hits, whether you make it or not is up to God, but if you do make it, you might as well be prepared and do a little better. (Anonymous, Spokane, July 2011)</p>
Responses influenced by spirituality emphasized a general moral duty or obligation to others.	<p><u>High Response Efficacy - Religious Reasons</u></p> <p>As children of God we shouldn't be foolish. I don't know if I'll be in the rapture. I don't fully understand it, but it makes me feel that I should be prepared....to be able to fight somebody, provide food for others, to be mentally aware and not "lose it". (Anonymous, Spokane, July 2011)</p> <p>You should not always focus on self, you should help others. (Anonymous, Maryland, July 2011)</p> <p>God is in charge of all life events and whatever happens is best for me. In Romans 8 it says "all things work together for good and for those who love God and are called according to His design and purpose" (v.28). But I should still protect my family. (Anonymous, Minnesota, July 2011)</p> <p>Preparation is common knowledge; we should be stewards of ourselves and our families. (Anonymous, Minnesota, July 2011)</p> <p>Disasters bring out opportunities to help others. (Anonymous, Kansas, July 2011)</p>

Themes	Relevant quotes
	<p>Our preparedness is of a realistic mindset. It should not cause anxiety, our biblical worldview colors that. We should be calm, not foolish, not caught unprepared. (Anonymous, Spokane, July 2011)</p> <p>The golden rule: do unto others as you would have them do unto you. (Anonymous, Lincoln, CA, July 2011)</p>

9. Relation of Findings to the Literature

Questions about response efficacy generated the least discussion and were generally answered in the affirmative with relatively little hesitation. Individuals agreed on the efficacy of preparing, giving both pragmatic and spiritual reasons for their answers. This reflects Yamane’s argument that certain moral or honorable practices—such as helping others in need—are independent of doctrinal differences and shared by all denominations (2007, p. 45). The relative brevity of discussion on this point was likely due to a shared assumption in the value of protecting one’s own and others’ lives and livelihoods.

a. Self-Efficacy

Individuals were asked to identify the extent to which they felt able to complete the recommended preparedness measures (Citizen Corps, 2006, p.3).

10. Overview of Findings

Most participants indicated low self-efficacy with respect to material preparations, combined with high self-efficacy in spiritual and emotional preparation. In a very small minority of cases, individuals reported high self-efficacy in material preparation; these same individuals had reported being “fully or almost fully” prepared in Question #1.

Table 9. Self-Efficacy Findings by Theme:

Themes	Relevant Quotes
Some responses indicated low self-efficacy based on unpredictability of threat.	<p><u>Low self-efficacy in material preparedness</u></p> <p>There are two sides of a coin...you need to provide for your family, but some things happen in life that you can't prepare for. (Anonymous, Kansas, July 2011)</p> <p>I could go out tonight and have a head on collision. I couldn't have prepared for that. (Anonymous, Kansas, July 2011)</p> <p>I don't think you can control what happens. (Anonymous, Spokane, July 2011)</p> <p>I could prepare a supply kit in my house, but what if my house is destroyed? I'm not sure it would do me any good. (Anonymous, Lincoln, CA, July 2011)</p> <p>How much can you really prepare? (Anonymous, Lincoln, CA, July 2011)</p>
A majority of responses indicated high self-efficacy based on spiritual beliefs and assurances in scripture. For major existential threats, spiritual preparation was perceived as more efficacious than material preparation.	<p><u>High self-efficacy in spiritual preparedness</u></p> <p>I have a strong faith and this is a calming influence in times of chaos. I know to trust god. (Anonymous, Maryland, July 2011)</p> <p>I rely on God. I'm more concerned with my final destination. (Anonymous, Maryland, July 2011)</p> <p>I don't have fear because I know that God will take care of me. (Anonymous, Lincoln, CA, July 2011)</p> <p>God oversees our needs; you are not your own overseer. In Genesis, Joseph stored 7 years of food and there was a 7 year famine. It was because he knew God. (Anonymous, Spokane, July 2011)</p> <p>I would trust that the Lord would make sure I was prepared. It's not something I need to do on my own. He would allow that I would be prepared naturally; I would happen to buy more water that day. God intervenes normally in our life like that. (Anonymous, Spokane, July 2011)</p> <p>Things don't happen randomly, if we know God...we have an intuitive knowing that marks our steps. (Anonymous, Spokane, July 2011)</p> <p>We won't be fearful because we're strong with our faith in god. (Anonymous, Spokane, July 2011)</p>

For this question, responses indicated a paradoxical relationship between participants' theological beliefs and their perceived ability to make preparations for disaster. When considering the question from a spiritual perspective, participants' showed confidence in their self-efficacy. Their assurance rested on a firm belief that they were in God's benevolent and omnipotent care, with unique access to divine insight and instructions. However, participants' trust and dependence on divine guidance did not directly foster, and sometimes obviated, the motivation to complete material preparedness tasks, such as preparing a kit or exercising a plan. With very little exception, participants indicated that their ability to meet the threat of catastrophic incidents was derived from God. The capacity to follow divine guidance was more important than, and often distinct from, the practical ability to complete emergency preparations.

11. Relation of Findings to the Literature

The finding of low self-efficacy for material readiness, as compared to high self-efficacy in spiritual preparedness, is noteworthy. The literature states that assessment of one's ability to mitigate risk or danger depends on the perception of how much control or power one has over circumstances or in life in general (Lazarus, 1984/2010, Kindle Locations 1605–1608). Feelings of self-efficacy, arguably, stem from this perceived power. Yet, as shown in this study, spiritual self-efficacy provides a broad sense of power in life, but does not dissolve the barriers to material self-efficacy. In this sense, the findings are consistent with Rohde (2008) who notes that Latter Day Saints are unique among denominations in having high levels of material self-efficacy—a key prerequisite in completing recommended preparedness measures.

Table 10. Exceptions

Themes	Relevant Quotes
In some cases, perceptions of high self-efficacy were not influenced by theology. These cases correlated with individuals who had reported relatively higher levels of personal preparedness.	<p><u>High self-efficacy (material preparedness)</u></p> <p>I grew up in Minnesota. We were taught what to do, how to hide in the northeast corner of the basement. We were always scoping it out in case of tornado. (Moderately prepared - anonymous, Spokane, July 2011)</p> <p>We have a tight-knit group in this community and we look out for each other because we are all in our retirement years. For example, we have a ham radio group and an emergency response group, so if a crisis hits we have a well-organized network. (Almost fully prepared - anonymous, Lincoln, CA, July 2011)</p> <p>I've been around a lot of survivalist people. Half my friends have no preparedness but I feel that I can take care of them. (Fully prepared - anonymous, Spokane, July 2011)</p>

12. Relation of Findings to the Literature

In all three of the cases above, the existence of a socially reinforcing influence, such as a small group, a family or a community appears to foster and sustain the preparedness behavior. This is consistent with Yamane (2007) who concludes that that “implementing beliefs,” which correspond to “experience and practice,” are more salient to contemporary religious groups than “warranting beliefs,” or core doctrinal tenets (p. 45). Not all three of these respondents share the same denomination, nor the same millennialist doctrine; what they do share is a history or a present habit of anticipating material needs with others. Yamane’s concept of ‘practice’ (2007, p. 45) is especially resonant here, as FEMA’s recommended preparedness measures include literal practice, or exercises, to ensure the household emergency plan is well understood.

B. OVERALL PREPAREDNESS MOTIVATION AND THE ROLE OF RELIGIOSITY

This section integrates two questions. The questions asked participants to identify the main factor motivating them to prepare, as well as the relationship between their spiritual beliefs and their reasons for preparing.

1. Overview of Findings

Responses indicated that spiritual beliefs motivated spiritual preparedness and intentions of helping others, while secular training or experience motivated material preparedness and self-reliance.

Most participants indicated that their primary motivation for material preparation was not directly motivated by theology. Rather, it depended on past experiences, training and personal upbringing or habits. When connecting their faith with the motivation to prepare, some participants dismissed religious influence; others emphasized the influence of their faith as overarching value rather than a practical set of instructions.

Table 11. Preparedness Motivation and the Role of Religiosity: Findings by Theme

Themes	Relevant quotes
When asked to identify their primary motivation for preparing, participants were more likely to name practical reasons rather than theologically-influenced reasons.	<u>Training, Experience, Education</u> Some of us have had military and law enforcement experience (Anonymous, Lincoln, CA, July 2011) I've been a volunteer firefighter (Anonymous, Spokane, July 2011) Looking at recent events in the world and the threat of war (Anonymous, Lincoln, CA, July 2011) I took an emergency preparedness class in college and I've studied criminal justice. I feel that god has a plan for me but at the same time, if it happened I would want to be more physically prepared. (Anonymous, Spokane, July 2011) <u>Personal experience with disasters</u> I've had past experience with hurricanes and violent storms (Anonymous, Kansas, July 2011) Experience of tornadoes in Minnesota (Anonymous, Spokane, July 2011) We got disaster kits as a result of 9/11. (Anonymous, Maryland, July 2011)

Themes	Relevant quotes
	<p><u>Obligation to others</u></p> <p>We would be more prepared if we had children living with us. (Anonymous, Lincoln, CA, July 2011)</p> <p>To care for others; help our family and neighbors (Anonymous, Lincoln, CA, July 2011)</p> <p><u>Practical Survival</u></p> <p>To be able to survive physically (Anonymous, Lincoln, CA, July 2011)</p> <p>I don't want to depend on the government; self-reliance (Anonymous, Lincoln, CA, July 2011)</p> <p>It was terrible what happened in Katrina. (Anonymous, Lincoln, CA, July 2011)</p> <p><u>Social interactions or norms</u></p> <p>Other church members have related to me experience with natural disasters. (Anonymous, July 2011)</p>
<p>When asked how their religious beliefs influenced their motivation to prepare, some participants</p> <p>disconnected their faith with their motivation to prepare.</p>	<p><u>Faith Disconnected from Material Preparation</u></p> <p>Religion does not affect my preparation; I'm just that way. (Anonymous, Maryland, July 2011)</p> <p>I've experienced a personal disaster. (Anonymous, Maryland, July 2011)</p> <p>My faith has no effect on my preparedness; it's common sense. (Anonymous, Maryland, July 2011)</p>
<p>For most individuals, spiritual beliefs motivated spiritual preparation rather than material preparation. Participants framed the connection between faith and preparedness in metaphysical terms,</p>	<p><u>Faith as Motive for Spiritual Preparation</u></p> <p>The bible tells us we will not know when the end will come so we should be always prepared. (Anonymous, Lincoln, CA, July 2011)</p> <p>The first step in being prepared is to know your destination. Look at the bible. It is best to prepare for eternity since we never know when the end will come. In Matthew 6 it says "And who of</p>

Themes	Relevant quotes
invoking broader concepts of service, spiritual readiness and emotional resilience.	<p>you by worrying and being anxious can add one unit of measure to his stature or to the span of his life?” (v.27) It also says “And why should you be anxious about clothes? Consider the lilies of the field and learn how thoroughly they grow; they neither toil nor spin” (v. 28). (Anonymous, Kansas, July 2011)</p> <p>The loss of my son put the whole thing in perspective. I rely on God. I’m more concerned with the final destination. (Anonymous, Maryland, July 2011)</p> <p>We don’t just respond [to the threat] outwardly by storing food and water, but out of the bigger picture. Things will get worse. Disaster preparedness is just one piece of it. We are investing spiritually, not physically today. (Anonymous, Spokane, July 2011)</p>
In the exceptional cases where respondents reported being fully prepared, the motivation was based on a personal philosophy that was not directly connected with faith.	<p><u>Personal philosophy as motive for material preparation</u></p> <p>I’ve had a feeling that I need to get stuff together, and not just for me. For some who don’t have anything, maybe it needs to be me to help them out. If the world goes all wonky, it’s up to God if you survive; but if you make it you might as well be prepared. Half my friends have no preparedness but I can take care of them. It’s just a feeling I’ve had. (Anonymous, Spokane, July 2011)</p> <p>I’ve always been prepared—that’s just how I am. (Anonymous, Maryland, July 2011)</p>

3. Relation of Findings to the Literature

Regardless of their actual preparedness levels, participants’ spiritual self-efficacy did not provide a motivation to prepare in the same way that physical exposure or practical experience did. This separation between spirituality and practical preparation might be explained by studies arguing that the unpredictability of natural disasters causes individuals to manage their emotions rather than the problem (Lehman & Taylor, 1987. pp. 552–553), and that this coping is more pronounced with the risk of terrorist attacks because they are considered more “random” (Aakko, 2004; Murphy et al., 2009, p. S8). The feeling of being under divine guidance and care may not be enough in itself to promote action related to personal disaster risk mitigation.

C. CONCLUSION

For participants in this study, personal disaster risk assessment, as defined by the PDP model, is not significantly influenced by religious end-times beliefs. Religiosity does not alter or alleviate the cognitive heuristics that have been shown to exert influence on risk assessment. Concerning the decision or motivation to prepare, data in this study suggests that both problem-focused coping and emotion-focused coping can be enhanced by the aspect of religiosity known as spiritual surrender.

Religiosity did not appear to influence the participants' tendency to engage in emotion-focused coping when confronted with the threat of disaster. Further, in some cases, spirituality supported emotion-focused coping by providing a way to idealize or abstract the survival experience. This occurred typically in estimations of threat severity and threat susceptibility, where individuals may have more readily imagine biblical disasters than contemporary threat scenarios.

At the same time, responses suggest that religiosity goes far beyond managing emotions. When the group discussions turned to ultimate reliance on God, the individuals' engagement with each other and with the topic generally increased. Comments such as "It is so nice to be among a group of believers" (Anonymous, July, 2011) and "I'm really starting to feel like I should prepare more" (Anonymous, July, 2011) suggested that group members might be unifying around their faith and a cause. This is consistent with Berger's theory (1969) that religion does not just relieve anxiety but creates social cohesion under an existential purpose (1969, p. 44).

The focus groups' capability to begin unifying around the cause of preparedness is consistent with the literature on spiritual surrender (Cole & Pargament, 1999). There is evidence that spiritual surrender supports emotion-focused and problem-focused coping equally, countering fatalism and enabling the believer to take efficacious action. Cole and Pargament note that "the clarity of mind that often follows spiritual surrender may enhance both the ability to take constructive action and the ability to adapt to life situations" (1999, p. 187).

Group cohesiveness that is fostered by mutual spiritual surrender may provide fertile ground for preparedness practices, should they align with a church's "implementing beliefs," or behavioral norms that link actions to a divine plan (Glock & Stark, 1965, p. 25). Such an alignment would likely require envisioning and practicing preparedness in a faith-based setting.

V. CONCLUSION AND RECOMMENDATIONS

A. MILLENNIALISM, SELF-EFFICACY AND DISASTER RESILIENCE

DHS's efforts to elevate public risk perception and promote preparedness behaviors have a potentially formidable ally in faith-based millennialist groups. As Putnam (2000) suggests, missions placed in the hands of worship communities gain social currency with ease and sustained force. With this in mind, the intersection between millennialist beliefs and the Personal Disaster Preparedness Model is a promising subject of study. This is due in part to the large numbers of U.S. inhabitants who hold such beliefs (Pew Research Center, 2008; Robinson, 2009), and in part to the compelling cognitive scripts that such beliefs would inspire (Abelson, 1981, 716–717). Millennialist beliefs often have the ability to foster anticipation of worst-case scenarios. To move from contemplation to action, both the script itself and the context for enacting it must both be present; at that point, “the individual must *enter* the script” (Abelson, 1981, p. 719, emphasis in the original). If the cognitive script for the coming of the millennium has a practical analogue in disaster preparedness, emergency management efforts stand to benefit from this knowledge.

Disaster preparedness, as defined by FEMA's Personal Disaster Preparedness Model, requires one to feel both vulnerable and empowered in the face of disaster, and to assign significant meaning to both the catastrophe and the ability to mitigate it. From the foundation of this mindset comes the willingness to rehearse disaster long before it exists—in the home, in the family and in the community. It is this anticipatory, practical rehearsal of resilience that separates the people who are thinking about preparing and people who are truly ready.

If it were possible to merge the passion inspired by end-times doctrine and the motivation required to enact and sustain personal resilience, religious communities—Christian and otherwise—would potentially lead the resilience charge across the United States. Or, at the very least, resilience awareness among faith groups might begin to value proactive readiness as much as they currently value response and recovery.

1. Significance of This Thesis

This thesis has produced findings that potentially challenge FEMA's 2009 "religiousness profile" showing a correlation between religiosity and relatively high levels of personal preparedness. Analysis of focus group data from 34 participants has led to the finding that these individuals recognize the threat somewhat (although mostly in spiritual terms), but perceive barriers to preparing. This conclusion is different from the FEMA statistics and modeling suggesting that religiosity correlates with fewer barriers to preparing and consequently higher levels of readiness (2009, p. 44; 2006, p. 3). While it may be that FEMA's religious participants reported being more prepared than their secular counterparts, the individuals interviewed in this thesis showed different characteristics. Not only are they less prepared as a group, but data suggests that their perceived challenges to preparing stem mostly from the tendency to spiritualize the threat, which reduces material self-efficacy but increases spiritual self-efficacy. Therefore, the findings of this thesis suggest a need to compile a Threat/Efficacy Profile specific to individuals who hold religious millennialist beliefs.

Spiritual self-efficacy—and in particular, spiritual surrender—does not necessarily amount to a favorable Efficacy profile. This study has found that millennialist beliefs provide, in Glock and Stark's terms (1965), the *warranting and purposive* foundational beliefs to support preparedness, but not necessarily the *implementing beliefs*, unless social practices within the church also support material disaster readiness. Put another way, millennialist beliefs provide the individual with the spiritual self-efficacy to ease personal anxiety about disaster, but they do not necessarily lend themselves to material self-efficacy. Data suggests that having a compelling eschatological script and a significant story line in which to rehearse one's role (*warranting* and *purposive* beliefs) will not guarantee readiness. Without fellow cast members and an earthly director (*implementing* beliefs), the individual will likely spiritualize preparedness and fail to enact FEMA's resilience measures. Absent social norms that foster enactment of material preparations, religiosity will likely support *emotion-focused* coping over *problem-focused* coping.

Below is offered a preliminary Threat/Efficacy profile for religious millennialism based on data compiled in this study.

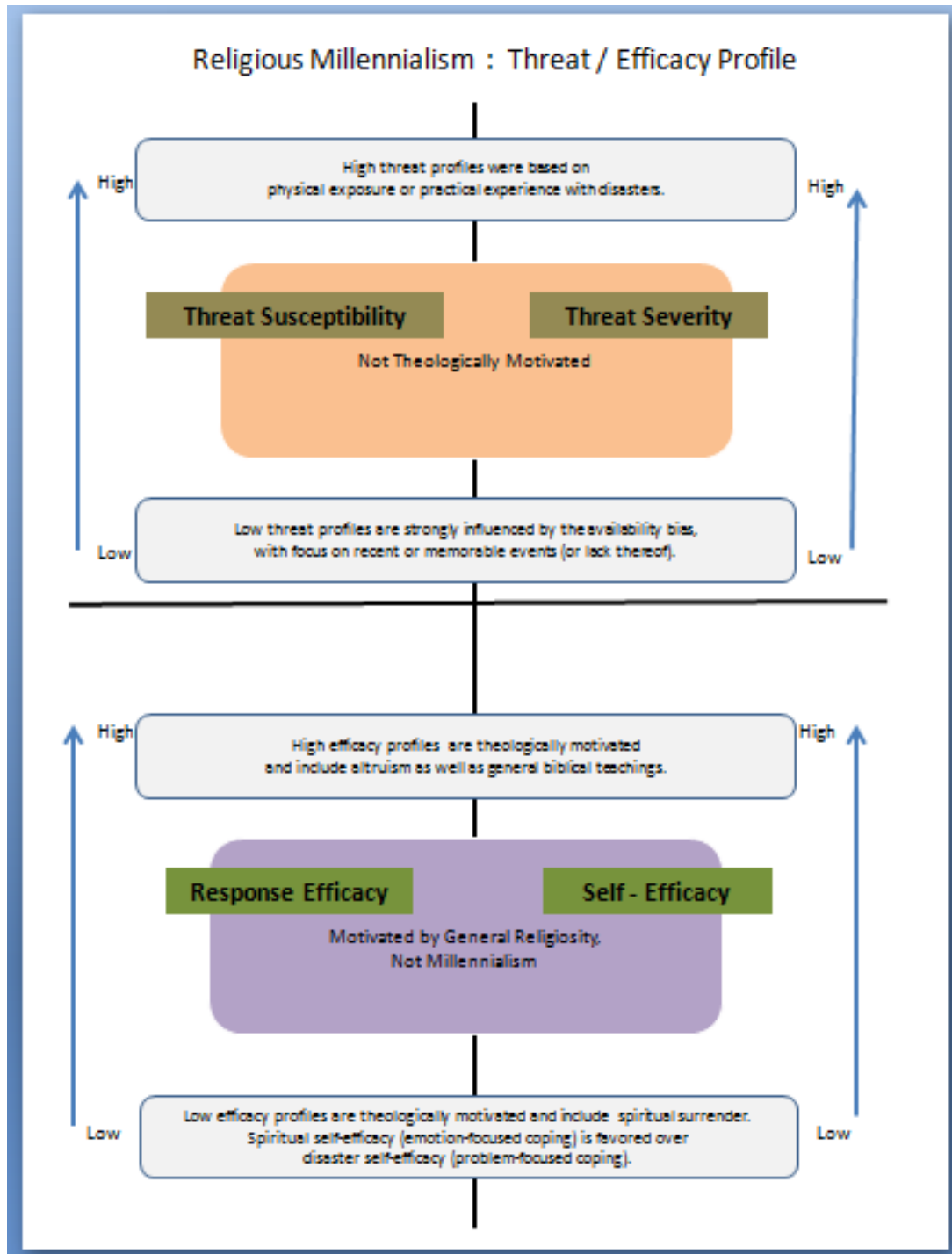


Figure 1. Threat/Efficacy Profile Based on Focus Group Findings

This model could be tested in future research using measurements of a much larger population, such as the one represented in the Citizen Corps 2009 study.

2. Recommendations for Future Study

This study has collected and analyzed primary source data from individuals specifically within the Christian population, focusing on those who hold strong religious beliefs, which include a theory of the end of days. Christians, however, are not the only faith-based groups who hold millennialist beliefs (Robbins & Palmer, 1997). Future research on millennialist implications in the PDP Model might ask the following questions:

- Does religiosity really correlate with a positive Threat/Efficacy profile, as FEMA's initial data suggests?
- What would the Threat/Efficacy profile of religious populations look like if informed by survey questions that examined the role of eschatological beliefs? Would the profile significantly differ, for instance, between Christian and Muslim eschatology?
- How do Threat/Efficacy profiles differ among religious denominations and among millennialist versions (pre-, post- and amillennialists), and what can we learn about the preparedness posture of faith-based groups in this light?
- How do FEMA's disaster preparedness messages compare to theological messages and/or scriptural passages on the same topic? Respecting the distinction between church and state, as well as individual constitutional rights, what opportunities exist for alignment of emergency management messages with biblical tropes, in partnership with faith leaders?
- If, as FEMA suggests (2006), Threat/Efficacy profiles determine receptivity to preparedness messages, how might FEMA shape future messages to faith-based groups who hold strong millennialist beliefs?

To determine the extent to which religiosity is an asset in disaster resilience, future hypotheses and studies could be based on the questions above. Additionally, future studies could map millennial narratives and doctrines against behavior change models to determine the overlaps between theological and risk-based motivations.

If Flynn's "civic virtue" (2001) is the antidote to Holdeman's "4 Stages of Disaster Denial" (Greenstone, 2010), building the bridge between denial and virtue will require significant imagination, as well as ongoing and socially reinforced practices. Whether or not religious eschatology provides the imaginative spark and the social capital to support those practices, it should be examined for its potential within the resilience mission. Closer investigation will provide insight into the role of end-times beliefs in the preparedness posture of the American public. Findings can potentially inform future national survey efforts, as well as emergency management policy improvements.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

- Aakko, E. (2004) Risk communication, risk perception, and public health. *Wisconsin Medical Journal* 103(1), pp. 25–27.
- Abelson, R. P. (1981). Psychological status of the script concept. *American psychologist* 36(7), pp. 715–729.
- Almond, G. A., Appleby, R. S. & Sivan, E. (2003). *Strong religion: The rise of fundamentalisms around the world*. Chicago: University of Chicago Press.
- Berger, P. L. (1967). *The sacred canopy: Elements of a sociological theory of religion*. New York: Doubleday & Company, Inc.
- Bloesch, D. G. (1978). *Essentials of evangelical theology, volume one: God, authority and salvation*. San Francisco: Harper Collins Publishers.
- Bock, D., Blaising, C., Gentry, K., & Strimple, R. (1999). *Three views of the millennium and beyond*. Grand Rapids, MI: Zondervan.
- Bromley, D. G. (1997). Constructing apocalypticism: Social and cultural elements of radical organization. In Robbins, T. and Palmer, S. J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge, pp. 31–45.
- Camerer, C., & Kunreuther, H. (1989) Decision processes for low probability events: Policy implications. *Journal of Policy Analysis and Management* 8, 565–592.
- Cigler, Beverly A. (2007). The “big questions” of Katrina and the 2005 great flood of New Orleans. *Public Administration Review* 67 (suppl 1), 64–76.
DOI: 10.1111/j.1540-6210.2007.00814.x.
- Citizen Corps (2006). Citizen Corps Personal Behavior Change Model for disaster preparedness. Retrieved October 23, 2010 from
http://www.citizencorps.gov/downloads/pdf/ready/citizen_prep_review_issue_4.pdf
- Citizen Corps (2007), Update on citizen preparedness research. Retrieved October 23, 2010 from
http://www.citizencorps.gov/downloads/pdf/ready/citizen_prep_review_issue_5.pdf
- Citizen Corps (2009), Personal preparedness in America: Findings from the 2009 Citizen Corps national survey (Rev. December, 2009). Retrieved October 23, 2010 from
http://www.citizencorps.gov/downloads/pdf/ready/2009_Citizen_Corps_National_Survey_Findings.pdf

- Cole, B. S. & Pargament, K. I. (1999). *Spiritual surrender: A paradoxical path to control. Integrating spirituality into treatment: Resources for practitioners*. Washington, DC: American Psychological Association, pp. 179–198.
- Compasano, N. (2010). *Community preparedness: Creating a model for change*. Master's thesis, Naval Postgraduate School, Monterey, CA. Retrieved March 1, 2011 from <http://www.hsdl.org/?view&doc=120265&coll=limited>
- Conroy, A. (2008). *What is going to move the needle on citizen preparedness? Can American create a culture of preparedness?* Master's thesis, Naval Postgraduate School, Monterey, CA. Retrieved March 1, 2011 from <http://www.hsdl.org/?view&doc=90220&coll=limited>
- Cowlitz County Department of Emergency Management (2011). Are you in disaster denial? [web log entry]. Retrieved October 23, 2011 at <http://cowlitzcountydem.blogspot.com/2011/05/are-you-in-disaster-denial.html>
- Cox, H. (1995). *Fire from heaven: The rise of Pentecostal spirituality and the reshaping of religion in the twenty-first century*. Cambridge, MA: Da Capo Press.
- Cuneo, M. W. (1997). The vengeful virgin: Case studies in contemporary American catholic apocalypticism. In Robbins, T. and Palmer, S.J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge, pp. 175–194.
- Department of Homeland Security (2008). One team, one mission, securing our homeland: U.S. department of homeland security strategic plan: Fiscal years 2008-2013. Retrieved December 18, 2010 from http://www.dhs.gov/xlibrary/assets/DHS_StratPlan_FINAL_spread.pdf
- Federal Emergency Management Agency (FEMA) (n.d.). About the ready campaign. Retrieved October 28, 2010 from <http://www.ready.gov/america/about/index.html>
- Federal Emergency Management Agency (2008). FEMA strategic plan: Fiscal years 2008-2013. Retrieved October 23, 2010 from http://www.fema.gov/pdf/about/fy08_fema_sp_bookmarked.pdf
- Folkman, S. & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior* 21(3), pp. 219–239.
- Folkman, S. & Lazarus, R. S. (1985). If it changes it must be a process: study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology* 48(1), pp. 150–170.
- Fischhoff, B., Slovic, P. & Lichtenstein, S. (1982). Lay foibles and expert fables in judgments about risk. *The American statistician* 36(3), Part 2: Proceedings of the sixth symposium on statistics and the environment, pp. 240–255.

- Flynn, S. (2011). Recalibrating homeland security. *Foreign Affairs* 90(3), 130-140.
Retrieved September 11, 2011 from
<http://libproxy.nps.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=60123119&site=ehost-live&scope=site>
- Gaillard, J. C. & Texier, P. (2010). Religions, natural hazards, and disasters: An introduction. *Religion* 40, 81–84.
- Gheytanchi, A., Joseph, L., Gierlach, E., Kimpara, S., Housley, J., Franco, Z. E., & Beutler, L. E. (2007). The dirty dozen: Twelve failures of the hurricane Katrina response and how psychology can help. *American psychologist* 62(2), pp. 118–130.
- Glenn, C. (1979). Natural disasters and human behavior: Explanation, research and models. *Psychology: A quarterly journal of human behavior* 16(23-36), pp. 24–36.
- Glock, C. Y. & Stark, R. (1965). *Religion and society in tension*. Chicago: Rand McNally.
- Government Accountability Office (2010). Emergency preparedness: FEMA faces challenges integrating community preparedness programs into its strategic approach. Retrieved October 23, 2010 from
<http://www.gao.gov/new.items/d10193.pdf>
- Greeley, A. M. (1990). *The Catholic myth: The behavior and beliefs of American Catholics*. New York: Scribner, 1990.
- Greenstone, J. L. (2010). Disaster non-preparedness: the orange bag denial. *International Journal of Emergency Mental Health* 12(1), 7–9.
- Gregory, G. (1995). Persuading the public to make better use of natural hazards information. *Prometheus* 13(1), pp. 61–71.
- Grenz, S. J. (1992). *The millennial maze: Sorting out evangelical options*. Downers Grove, IL: InterVarsity Press.
- Haney, T. J., Elliott, J. R., & Fussell, E. (2005). Families and hurricane response: Evacuation, separation, and the emotional toll of Hurricane Katrina. In D.L. Brunsma, D. Overfelt, & S. Picou (Eds.), *The sociology of Katrina: Perspectives on a modern catastrophe* (pp. 71–90). New York: Rowman & Littlefield Publishers, Inc.
- Holdeman, E. (2008). Disaster denial [Web log post]. Cowlitz County Department of Emergency Management. Retrieved November 24, 2010 from
<http://cowlitzcountydem.blogspot.com/2008/10/disaster-denial.html>

- Homeland Security Advisory Council (2011). Community resilience task force recommendations. Retrieved September 14, 2011 at <http://www.dhs.gov/xlibrary/assets/hsac-community-resilience-task-force-recommendations-072011.pdf>
- Institute for the Analysis of Global Security (2004). How much did the September 11 terrorist attack cost America? Retrieved September 14, 2011 at <http://www.iags.org/costof911.html>
- Introvigne, M. (1997). Latter day revisited: Contemporary Mormon millenarianism. In Robbins, T. and Palmer, S. J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge, pp. 229–244.
- Janoff-Bulman, R. & Timko, C. (1987). Coping with traumatic events: the role of denial in light of people's assumptive worlds. In Snyder, C. R., & Ford, C. E. (Eds.), *Coping with negative life events*. New York: Plenum Press, pp. 135–159.
- Kroll-Smith, J. S. & Couch, S. R. (1987). A chronic technical disaster and the irrelevance of religious meaning: The case of Centralia, Pennsylvania. *Journal for the Scientific Study of Religion* 26(1), 25–37.
- Kunreuther, H. (2006). Disaster mitigation and insurance: Learning from Katrina. *Annals of the American academy of political and social science* 604, pp. 208–227.
- Lawson, R. (1997). The persistence of apocalypticism within a denominationalizing sect. In Robbins, T. and Palmer, S. J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge, pp. 207–228.
- Lazarus, R. S. & Folkman, S. (1984/2010 Kindle Ed.). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Leedy, P. D. & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). Boston: Pearson Education, Inc.
- Lehman, D. R. & Taylor, S. E. (1988). Date with an earthquake: Coping with a probable, unpredictable disaster. *Personality and Social Psychology Bulletin* 13(4), pp. 546–555.
- Luebbers, A. (2001). The remnant faithful: A case study of contemporary apocalyptic Catholicism. *Sociology of Religion* 62(2), 221–241.
- Macchia, F. D. (2008). Pentecostal and charismatic theology. In Walls, J. L., (Ed.). *The Oxford Handbook of Eschatology* (Kindle Edition). New York: Oxford University Press.

- Maynard, E., Gorsuch, R. L., & Bjorck, J. P. (2001). Religious coping style, concept of god and personal religious variables in threat, loss, and challenge situations. *Journal for the Scientific Study of Religion* 40(1), 65–74.
- Maxfield, M. G. & Babbie, E. (2009). *Basics of research methods for criminal justice and criminology* (2nd ed.). Belmont, CA: Wadsworth, Cengage Learning.
- Meyer, R. J. (2006). Why we under-prepare for hazards. In Daniels, R. J., Kettl, D. F. & Kunreuther, H. (Eds.), *On risk and disaster: Lessons from Hurricane Katrina*. Philadelphia: University of Pennsylvania Press, pp. 153–173.
- McCaughey, B. G, Hoffman, K. J., & Llewellyn, C. H. (1994). The human experience of earthquakes. In Ursano, R. J., McCaughey, B. G., & Fullerton, C. S. (Eds.), *Individual and community responses to trauma and disaster: The structure of human chaos*. Cambridge, UK: Cambridge University Press, 1994, pp. 136–153.
- McEntire, D. A. (2008) Principles, practice, philosophy and doctrine of emergency management: Session 4: Progressive emergency management. Retrieved September 14, 2011 at [http://training.fema.gov/EMIWeb/edu/docs/PrinciplesOfEM/Principles%20of%20EM%20-%20%20Work%](http://training.fema.gov/EMIWeb/edu/docs/PrinciplesOfEM/Principles%20of%20EM%20-%20%20Work%20)
- McMinn, L. (2001). Y2K, the apocalypse, and evangelical Christianity: The role of eschatological belief in church responses. *Sociology of Religion* 62(2), 205–220.
- Murphy, S. T., Cody, M., Frank, L. B., Glik, D., & Ang, A. (2009). Predictors of emergency preparedness and compliance. *Disaster Medicine and Public Health Preparedness*. Retrieved July 23, 2011 at <http://www.dmphp.org/cgi/content/abstract/DMP.0b013e3181a9c6c5v1>
- Napolitano, J. (29 September, 2009). Secretary Napolitano's remarks on preparedness at the American Red Cross. Retrieved October 28, 2010 from <http://www.ready.gov/america/npm10/napolitano.html>
- Napolitano, J. (2011). Progress toward a more secure and resilient nation. *Homeland Security Affairs* 7, The 9/11 Essays. Retrieved September 11, 2011 at <http://www.hsaj.org/?article=7.2.14>
- Napolitano, J. (2011). State of America's homeland security address. Retrieved September 14, 2011 at http://www.dhs.gov/ynews/speeches/sp_1296152572413.shtm
- National Oceanic and Atmospheric Administration (NOAA) (2011). U.S. hurricane top ten lists. Retrieved September 14, 2011 at <http://stateofthecoast.noaa.gov/insurance/hurricanetopten.html>

- Nelson, L. D. & Dynes, R. R. (1976). The impact of devotionism and attendance on ordinary and emergency helping behavior. *Journal for the Scientific Study of Religion* 15(1), 47–59.
- Obama, B. (2011). Presidential Policy Directive /PPD-8: National Preparedness. Retrieved September 14, 2011 at http://www.dhs.gov/xabout/laws/gc_1215444247124.shtm
- Partridge, Christopher (2008). The end is nigh: Failed prophecy, apocalypticism, and the rationalization of violence in new religious eschatologies. In Walls, J. L., (Ed.). *The Oxford Handbook of Eschatology* (Kindle Edition). New York: Oxford University Press.
- Paynter, S. (2001). Be ready for anything, starting with a first-aid kit. Seattle post-intelligencer. Retrieved September 14, 2001 at <http://www.seattlepi.com/news/article/Be-ready-for-anything-starting-with-a-first-aid-1073824.php>
- The Pew Research Center (2008). U.S. religious landscape survey: Religious affiliation: Diverse and dynamic. Washington, D.C.: The Pew Forum on Religion & Public Life. Retrieved December 18, 2010 from <http://religions.pewforum.org/pdf/report-religious-landscape-study-full.pdf>
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). London: Sage Publications, Inc.
- Phillips, T. R. & Okholm, D. L. (1996). *Welcome to the family: An introduction to evangelical Christianity*. Wheaton, IL: BridgePoint.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Touchstone.
- Ripley, A. (2006). Why we don't prepare for disaster. Time magazine. Retrieved September 14, 2011 at <http://www.time.com/time/magazine/article/0,9171,1229102-7,00.html>
- Robbins, T. & Palmer, S. J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge.
- Robinson, B. A. Glossary of religious and spiritual terms. Ontario Consultants on Religious Tolerance. Retrieved July 17, 2011 at http://www.religioustolerance.org/g_l_r.htm.
- Robinson, B. A. (2009) Competing theories of eschatology, end times, and millennialism. Ontario Consultants on Religious Tolerance. Retrieved July 17, 2011 at <http://www.religioustolerance.org/millenni.htm>

- Robinson, B. A. (2010). Definitions of the word "religion" (None are totally satisfying). Ontario Consultants on Religious Tolerance. Retrieved July 23, 2011 at http://www.religioustolerance.org/rel_defn.htm
- Robinson, B. A. (2011). Definitions of the word "religion": More definitions, including our own. Ontario Consultants on Religious Tolerance. Retrieved July 23, 2011 at http://www.religioustolerance.org/rel_defn3.htm
- Robinson, B. A. (2011). Who is a Christian? Simple question; many conflicting, certain answers; no consensus. Ontario Consultants on Religious Tolerance. Retrieved July 23, 2011 at http://www.religioustolerance.org/chr_defn.htm
- Rohde, A. (2009). *Latter-day saint and other Christian spirituality, religiosity, personality, and self-efficacy as predictors of emergency preparedness and subjective well-being*. (Doctoral dissertation, Loyola College in Maryland, 2008). Retrieved from <http://gradworks.umi.com/33/77/3377728.html>
- Shupe, A. (1997). Christian reconstructionism and the angry rhetoric of neo-postmillennialism. In Robbins, T. & Palmer, S.J. (Eds.), *Millennium, Messiahs, and Mayhem*. New York: Routledge, pp. 195–206.
- Slovic, P. (1986). Informing and educating the public about risk. *Risk analysis* 6(4), pp. 403–415.
- Stern, G. (2007). *Can God intervene? How religion explains natural disasters*. Westport, CT: Praeger.
- Strozier, C. B. & Terman, D. M. (2010). Introduction. In Strozier, C. B., Terman, D. M., & Jones, J. W. (Eds.), *The fundamentalist mindset*. New York: Oxford University Press, pp. 3–7.
- Tierney, K. J. (2001). *Facing the unexpected: Disaster preparedness and response in the United States*. Washington, D.C.: Joseph Henry Press.
- Turner, R. H., Nigg, J. M., & Paz, D. H. (1986). *Waiting for disaster: Earthquake watch in California*. Berkeley: University of California Press.
- Tversky, A. & Kahneman, D. (1974). Judgement under uncertainty: Heuristics and biases. *Science* 185(4157), pp. 1124–1131.
- van der Pligt, J. (1998). Perceived risk and vulnerability as predictors of precautionary behavior. *British journal of health psychology* 3, pp. 1–14.
- Virkler, H. A. & Ayayo, K. G. (2007). *Hermeneutics: Principles and processes of biblical interpretation*. Grand Rapids, MI: Baker Academic.

- Wallenius, C. (2001). Why do people sometime fail when adapting to danger? A theoretical discussion from a psychological perspective. *International journal of mass emergencies and disasters* 19(2), pp. 145–180.
- Walls, J. L. (Ed.) (2008). *The Oxford Handbook of Eschatology* (Kindle Edition). New York: Oxford University Press.
- Warren, M. (2010). The coming of christ's kingdom: The end-times and the triumph of the gospel. Retrieved July 17, 2011 at <http://www.christianciv.com>
- Weber, T. P. (2008). Millennialism. In Walls, J.L., (Ed.). *The Oxford Handbook of Eschatology* (Kindle Edition). New York: Oxford University Press.
- Whalen, R. K. (2000). Dispensationalism. In Landes, R. A. (Ed.), *The Encyclopedia of Millennialism and Millennial Movements*. New York: Routledge.
- Wilcox, C. (1994). Premillennialists at the millennium: Some reflections on the Christian right in the twenty-first century. *Sociology of Religion* 55(3), 243–261.
- Wilson, B. (1963). Millennialism in comparative perspective (Review article). *Comparative studies in society and history* 6(1), pp. 93–114.
- Wohlberg, S. (2008). Saved from Wrath? Retrieved September 14, 2011 at <http://www.whitehorsemedia.com/articles/?d=48>
- Wohlberg, S. (2008). Time line of final events. Retrieved September 14, 2011 at <http://www.whitehorsemedia.com/articles/?d=3>
- Wohlberg, S. (2008). Tsunami: A Sign of the End? Retrieved September 14, 2011 at <http://www.whitehorsemedia.com/articles/?d=32>
- Wojcik, Daniel (1997). *The end of the world as we know it: Faith, fatalism and apocalypse in America*. New York: New York University Press.
- White House (11 May, 2010). Press briefing by Press Secretary Robert Gibbs and FEMA Administrator Craig Fugate. Retrieved October 28, 2010 from <http://www.whitehouse.gov/the-press-office/press-briefing-press-secretary-robert-gibbs-and-fema-administrator-craig-fugate>
- Yamane, D. (2007). Beyond beliefs: Religion and the sociology of religion in America. *Social compass* 54(1), pp. 33–48.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Rodrigo Nieto-Gomez
Naval Postgraduate School
Monterey, California
4. Anders Strindberg
Naval Postgraduate School
Monterey, California
5. Administrator John S. Pistole
U.S. Transportation Security Administration
Arlington, Virginia
6. Deputy Administrator Gale Rossides
U.S. Transportation Security Administration
Arlington, Virginia
7. Assistant Administrator Sean Byrne
U.S. Transportation Security Administration
Arlington, Virginia
8. Assistant Administrator Chris McLaughlin
U.S. Transportation Security Administration
Arlington, Virginia